

FOURTEENTH SEMIANNUAL REPORT
OF THE
Chief of the Cattle Bureau
TO THE
MASSACHUSETTS
STATE BOARD OF AGRICULTURE

FOR THE YEAR ENDING
NOVEMBER 30, 1908

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STATE HOUSE, BOSTON.

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REPORT.

To the State Board of Agriculture.

The fourteenth semiannual report of the Chief of the Cattle Bureau, as required by section 3 of chapter 116 of the Acts of 1902, is herewith respectfully submitted to your honorable Board.

This report gives in detail an account of the work of the Cattle Bureau for the fiscal year from Dec. 1, 1907, to Dec. 1, 1908.

During the past year there have been a number of conventions and conferences of special importance to the interests represented by the Cattle Bureau, to which delegates to represent the Commonwealth have been appointed by His Excellency the Governor.

The first one of these was a conference of the live stock sanitary authorities of the New England and some of the eastern States, held at the Hotel Victoria, New York City, March 12. At this meeting representatives of the cattle commissions of Maine and New Hampshire were present, also delegates from the Cattle Bureau of the Massachusetts State Board of Agriculture, the secretary of the Rhode Island State Board of Agriculture, three veterinarians from the New York State Department of Agriculture, three delegates from the New Jersey Tuberculosis Commission and three veterinarians from the Pennsylvania Live Stock Sanitary Board, and also the Chief of the United States Bureau of Animal Industry. His Excellency the Governor appointed the Chief of the Cattle Bureau, Mr. C. A. Dennen and Dr. Howard P. Rogers to represent Massachusetts at this conference.

While there is already in existence a body known as the

Interstate Association of Live Stock Sanitary Boards, which meets annually in September, in which any State is entitled to membership from the body analogous to the live stock sanitary board, yet the New England and eastern States have never been generally represented at its meetings, therefore it was decided at the conference in New York to form an association, with a membership composed of representatives from the New England States, New York, New Jersey and Pennsylvania, to discuss annually matters specially relating to the protection of the health of the live stock in these States.

It was decided to christen this body the Eastern Live Stock Sanitary Association. A constitution and by-laws were adopted and officers elected as follows:—

President, Dr. LEONARD PEARSON, Pennsylvania.

Vice-President, Hon. H. O. HADLEY, New Hampshire.

Executive Committee: Hon. JOHN M. DEERING, Maine; Hon. FRANKLIN DYE, New Jersey; Dr. WM. HENRY KELLY, New York.

Secretary-Treasurer, Dr. AUSTIN PETERS, Massachusetts.

It was also decided to meet annually to discuss measures of mutual benefit to the live stock sanitary interests of the States entitled to membership. The Chief of the United States Bureau of Animal Industry was also elected a member.

A little later in the spring the Governor appointed Dr. Howard P. Rogers, an agent of the Cattle Bureau and an expert on glanders, to attend a conference in Pennsylvania, with the Chief of the United States Bureau of Animal Industry, the State veterinarian of Pennsylvania and representatives from the Pennsylvania Live Stock Sanitary Board and the New York State Department of Agriculture, for the purpose of investigating suppurative or contagious lymphangitis in horses, a disease which may be mistaken for farcy by any one not conversant with it. Dr. Rogers saw a number of cases of this disease and brought home specimens from horses killed because of it for further study at the laboratory at the Harvard Medical School. It is undoubtedly of great value to the Commonwealth to have an agent of the Cattle Bureau made familiar with a disease which might be mis-

taken for farcy, and one which might be troublesome if it should appear in this State.

At present there is no legislation which would permit of the Cattle Bureau taking any action if this disease should be imported into Massachusetts, and, if there were, the provision of the law which divides the Commonwealth into the State of Massachusetts and the city of Boston so far as glanders and farcy is concerned would only complicate matters, as suppurative lymphangitis is a disease frequently mistaken for farcy.

The latter part of September and early in October the Chief of the Cattle Bureau was present at the International Congress on Tuberculosis at Washington, which he attended as a delegate to represent the Cattle Bureau, by authority of His Excellency the Governor.

Space does not permit giving a detailed account of this great gathering, with representatives from most of the civilized countries on the globe, among them many of the leading scientists of continental Europe, England and America. The meetings were held in the New National Museum building, which was not at the time completed, where there was a great deal of noise and not very good accommodations for meetings of this kind.

The meetings were held in sections and occupied several days, commencing Tuesday, September 29, and continuing during the week. Section VII. was upon "Tuberculosis in Animals and its Relation to Man," under the presidency of Dr. Leonard Pearson of Pennsylvania. Among the vice-presidents Massachusetts was represented by Drs. Theobald Smith, Langdon Frothingham and the Chief of the Cattle Bureau.

Among the papers read at this section was one by the Chief of the Massachusetts Cattle Bureau, giving a historical sketch of the agitation in this State in regard to bovine tuberculosis and the work done as a result. It was a condensation of a chapter written for a book called "Tuberculosis in Massachusetts," edited by Dr. Edwin A. Locke and published by the Commonwealth for distribution among delegates to the congress. The title of this chapter is "Bovine Tuberculosis

in Massachusetts, a History of the Earlier Agitation concerning it, and Efforts of the State for its Eradication and Control."

October 12 and 13 the Chief of the Cattle Bureau was present at a conference on hog cholera, at Ames, Ia., which he attended by authority of His Excellency the Governor, to represent the Cattle Bureau of the Massachusetts State Board of Agriculture. This conference was one of a series of similar conferences held at an experiment station of the United States Department of Agriculture at Ames, attended by delegates from different States, invited there by the Chief of the Bureau of Animal Industry to be given demonstrations of what the Department of Agriculture is doing in immunizing swine from hog cholera. Representatives from only a few States are invited to each conference, so that the demonstrations can be given to but a few at a time, which is of greater benefit to those present than one crowded meeting would be.

At the meeting attended by the writer there were present, beside the Chief of the United States Bureau of Animal Industry, Dr. Melvin, the chief of the biochemic division, Dr. Dorset; Dr. Niles, in charge of the experiment station, and his assistants; two veterinarians from the Canadian Department of Agriculture; the State veterinarian of Illinois; the State veterinarian of Montana; the veterinarian of the State Experiment Station of Wyoming, and the bacteriologist of the Delaware Department of Agriculture.

The results that have been accomplished by the government in immunizing swine from hog cholera are most valuable and interesting. It has been found that swine can be successfully immunized, and also that it is practicable to do so. This is done by using serum from the blood of a hyperimmunized hog, and virulent blood from a pig having hog cholera in an acute form. About 20 cubic centimeters of the serum is injected with a hypodermic syringe inside the thigh of the pig to be immunized, and 2 cubic centimeters of virulent blood serum inside the other thigh, and the combination of serum and virulent blood seems to give the pig to be pro-

tected immunity from the disease.¹ This principle of combining an active virus and a serum at the same time was first adopted by Koch in immunizing cattle from rinderpest in South Africa.

A recent adaptation of the same principle is one for protecting from rabies dogs that have been bitten by rabid dogs. The material is obtained from the Pasteur Institute in New York and costs \$20 per dog. The dog is given the first injection under the skin in the region of the flanks, as soon as possible after being bitten, and in about two weeks the second injection is given, a more powerful material being used the second time. If the dog remains free from rabies for two or three weeks after the second injection he will not develop the disease, and also has an immunity from rabies conferred upon him which, it is claimed, will last for a year and a half or longer. This immunity is conferred in much the same way as the immunity from hog cholera; that is, serum from a hyperimmunized sheep is mixed with a certain amount of fresh brain from a rabid rabbit, and used first in a mild strength and later in a much stronger mixture. This treatment has not yet been tried on humans; persons bitten still have to take the usual Pasteur protective treatment. It has not been used upon other animals than dogs, because horses and cattle would take so much that the expense would be almost prohibitive.

Iowa, it is said, has about 7,000,000 swine and Illinois about 5,000,000. In such States this method of immunization would be most valuable, and ought to be taken up by the State live stock sanitary boards. In Massachusetts there are only about 85,000 swine and only a few large herds, most of them being kept by persons who own but a few animals; and considering the amount of hog cholera occurring in this State it is a question whether or not it would be worth while for the Commonwealth to establish a small farm and laboratory for

¹ Any one interested in a full and detailed account of the work done at the experiment farm of the United States Department of Agriculture at Ames, Ia., is referred to Bulletin 102 of the Bureau of Animal Industry, United States Department of Agriculture, which may be obtained by writing to the Secretary of the United States Department of Agriculture, Washington, D.C., or to his own congressman.

this work. It might be worth while to have such a plant to do this, combined with other work, either at the State Experiment Station at Amherst or at some more available location near Boston. At present all the heads from dogs and other animals to be examined for rabies, swabs to be inoculated into guinea pigs for diagnosing glanders and the like, sent to the Cattle Bureau office are forwarded to the Harvard Medical School for examination. With a laboratory as suggested above work could be done on hog cholera, making the diagnoses that are now made at the Harvard Medical School, preparing material for the preventive inoculation against symptomatic anthrax, and perhaps making mallein and tuberculin.

While the Governor has authority to send delegates to a conference or convention as cited above, he cannot authorize any one to incur any expense on the part of the Commonwealth beyond its boundaries if sent to investigate any matter.

For example, November 10 a telegram was received from Dr. Leonard Pearson, State veterinarian of Pennsylvania, from Milton in that State, announcing an outbreak of foot-and-mouth disease. It seemed at the time that it was important and desirable to send an agent of the Massachusetts Cattle Bureau at once to the scene of the trouble in order to ascertain its extent and origin, and to see if there was any danger of its extending to Massachusetts. This was suggested to the Governor, who referred the Chief of the Cattle Bureau to the Attorney-General to ascertain if an agent could be sent at the expense of the Commonwealth. After consulting the law the Attorney-General gave it as his opinion that such an expense could not legally be incurred.

It would seem that here there is a defect in the law that ought to be remedied, as there must be instances when it is more important to be able to send an agent to investigate and report upon some matter than it is to be able to send delegates to some conference or congress. In this case there was but one thing to do, and that was to wait patiently for what information could be gleaned from the newspapers and from correspondence with State officials in New York and Pennsylvania,

and the Chief of the United States Bureau of Animal Industry. As can well be imagined, these officials have been very busy, and in many instances it has taken time to obtain the information desired.

This outbreak of foot-and-mouth disease is interesting because it gives rise to the question, how can a disease that was not known to exist on this continent, but that would have to be imported from abroad, probably from Europe or Asia, suddenly make its appearance here, and at a point so remote from the seacoast?

When the outbreak of epizootic aptha in Massachusetts occurred during the winter of 1902 and 1903, it was supposed at that time that it must have been brought here in hay or straw used for packing merchandise, thrown out upon the docks at East Boston and taken to Chelsea by some thrifty Hebrew cow owner, and that cattle thus infected started the outbreak. No other possible solution of the question would ever have been thought of if it had not been for the experiments of Dr. Ernest E. Tyzzer at his father's farm in Wakefield in the summer of 1903, a full account of which is given in the fourth semiannual report of the Chief of the Cattle Bureau to the State Board of Agriculture. Dr. Tyzzer was at that time making a study of smallpox, and his investigations included a study of vaccine virus. In making some inoculation experiments on calves he started an independent outbreak of foot-and-mouth disease at his father's farm. The United States Bureau of Animal Industry and the Massachusetts Cattle Bureau then hired a little place at Wakefield, and bought three cows and three calves and took them there. Dr. Tyzzer then repeated his experiments with the same vaccine virus, with the same results. The following is an extract from the report above referred to:—

It is perfectly evident, from the results of these experiments, that vaccine virus may become contaminated with the virus of foot-and-mouth disease, and convey the latter through the medium of animals used for the production of vaccine virus. This accidental discovery may be the solution of the cause of the original outbreak.

As nearly as can be ascertained, the first place for foot-and-mouth disease to make its appearance was upon the premises of the late

Owen Clark, in Prattsville, just over the Revere line, either late in July or early in August, 1902. By the latter part of August it had spread to the premises of two or three of his neighbors, and thence was carried to various points, where the disease prevailed during the autumn and winter of 1902 and 1903.

Prior to the time of the discovery and public announcement of foot-and-mouth disease, the middle of November, 1902, the New England Vaccine Company of Chelsea bought the young cattle it used for the production of vaccine virus from Mr. Clark, who would buy thrifty looking young cattle from various sources, and when they had been used at the New England Vaccine Company's establishment he would take them home to his place, where they were kept for a while, until he could dispose of them.

The proprietor of the New England Vaccine Company states that the vaccine virus produced there during the last three or four years has retained its strength to a remarkable degree, and that it has not been necessary to introduce new "seed," as is often done at these establishments when the virus is found to be deteriorating; but it has been his custom when inoculating animals to put in a couple of "control" points of virus placed on the market by other producers, in order to compare the quality of his with theirs, and to be sure that his product was maintaining its standard of strength as compared with others.

During 1902 he used the product of six different American manufacturers of vaccine virus, among others some from the same establishment from which Dr. Tyzzer's supply was obtained, which was used in the Wakefield experiments.

During the summer of 1902 the proprietor of the New England Vaccine Company was in Europe, and little was done at that establishment; but in order to keep the vaccine virus from losing its vitality it was necessary for his assistant to inoculate an animal every month or six weeks, for the purpose of carrying the supply along at a standard strength. When one of these inoculations was made, "control" points were also put in for comparison. It does not seem unlikely that a heifer may have been inoculated in July, and control points used which were contaminated with foot-and-mouth disease virus, enabling the animal to convey the disease to Owen Clark's premises either late in July or early in August, without contaminating the vaccine virus produced by the New England Vaccine Company, as it has been shown by Dr. Tyzzer's investigations that the calves inoculated with a mixed vaccine and foot-and-mouth disease virus did not show easily recognizable symptoms of foot-and-mouth disease, yet they were capable of producing it in an unmistakable form among the cattle with which they were kept. At least, there is no history to show that animals used later at the New Eng-

land Vaccine Company's establishment for the production of vaccine virus had any disease other than cow-pox.

As foot-and-mouth disease prevails extensively in France, Italy, Austria and Switzerland, and also to a less degree in some of the other European countries, it does not seem impossible for the disease to have been imported from Europe in fresh "seed" brought over to some vaccine virus establishment in the United States, to renovate a product that was losing its vitality.

Having this possible origin in mind, and knowing that there was at Detroit, Mich., a large drug manufacturing firm that of late years has embarked extensively upon the production of biological products for the market, a letter was written to the Chief of the United States Bureau of Animal Industry, as follows:—

COMMONWEALTH OF MASSACHUSETTS,
CATTLE BUREAU OF THE STATE BOARD OF AGRICULTURE,
STATE HOUSE, BOSTON, NOV. 20, 1908.

Dr. A. D. MELVIN, *Chief United States Bureau Animal Industry,*
Washington, D. C.

DEAR SIR:—When the time comes to trace the possible source of the outbreak of foot-and-mouth disease I think the possibility of its being introduced into this country through vaccine virus should not be lost sight of. At the time of the outbreak of foot-and-mouth disease in Massachusetts in the winter of 1902-03, an independent outbreak was started in Wakefield in August, 1903, by Dr. Ernest E. Tyzzer, who was doing some experimental work in the study of vaccine virus. He inoculated calves with vaccine virus obtained from a wholesale manufacturing drug firm of Philadelphia, at his father's farm, and started an independent outbreak of foot-and-mouth disease. The United States Bureau of Animal Industry and the State of Massachusetts afterwards had him repeat the experiments at a little place that was hired in Wakefield for the purpose, and he gave calves foot-and-mouth disease again with the same vaccine virus. Dr. Salmon always took the ground that it might have been contaminated by having been kept in Dr. Frothingham's ice chest at the Harvard Medical School, but this does not seem at all certain.

The original outbreak of foot-and-mouth disease in 1902 seems to have started in Chelsea, and one of the first places where it occurred was on the premises of a man named Owen Clark. Owen Clark used to furnish cattle to Dr. Culver, who ran a vaccine virus establishment in Chelsea. After Dr. Culver was through with the cattle he

used to return them to Clark. Dr. Culver from time to time obtained vaccine virus from outside sources to either strengthen his product or to standardize it. Among others he had material from the same firm in Philadelphia, in the summer of 1902.

I think it would be well in investigating this outbreak to see if the ——— Company in Detroit has had any vaccine virus from abroad recently, also find out whether they kill the cattle that they use for producing vaccine virus, or whether they are sold to farmers in the vicinity of Detroit. If it cannot be traced in this way to the ——— Company I think any other vaccine virus plant in any locality where foot-and-mouth disease seems to have originated ought to be investigated in the same way, in order to determine whether there is a possibility of the disease being introduced into this country through some such source or not.

If you do ascertain the origin of the trouble I would be very much obliged to you if you could give me a brief history of the trouble and its origin.

Yours respectfully,

AUSTIN PETERS,
Chief of Cattle Bureau.

The result has been that the outbreak in Pennsylvania was traced to the stock yards at East Buffalo, thence to the stock yards at Detroit, and from there to various herds nearby, and finally to the farm of the drug firm in question. The difference between the management of the young cattle used at the plant of the Philadelphia concern in 1902-03 and the Detroit firm is that the Philadelphia firm killed the calves when it was through with them, hence the disease did not escape in the neighborhood of Philadelphia in 1902 as it otherwise would, while the Detroit firm sends its young cattle to its farm after it is through with them, and from there the disease spread and has made a great deal of trouble. Both the firms in question are said to have had a virus from Japan which they considered particularly active. It is not unlikely that the malady has been imported each time in Japanese vaccine virus, and the present outbreak seems to prove conclusively that the outbreak of 1902-03 was brought here in precisely the same manner as the present one. The present outbreak appears to be well in hand, and there seems to be no danger of its extension to Massachusetts. The United States Department of Agriculture has forbidden shipments of neat cattle, swine, sheep or other ruminants from infected

States into other States, as well as hay, straw, hides, skins, hoofs, etc. The federal orders have been supplemented by Cattle Bureau orders concurring with them so as to still further protect this Commonwealth, and have also been extended to include grain and grain bags from the infected districts. As the situation has improved in New York State and Michigan, the orders have recently been modified to allow the shipments of hay, straw, grain, grain bags, hides, skins and hoofs from all but five counties in western New York and five counties near Detroit in Michigan. This has brought much-needed relief to the hay and straw market in Massachusetts, particularly Boston, which was feeling the effects of the embargo.

The quarantine regulations are still in force on cattle, swine, sheep and other ruminants in New York, Michigan, Pennsylvania and Maryland. The total number of animals killed thus far as diseased or exposed is 3,605, on 154 farms or premises. The total appraised value of these animals is \$88,268, of which two-thirds has been or is to be paid by the federal government and one-third by the States. The figures for the different States are: Michigan, 9 premises, 242 cattle, 23 hogs, 9 sheep and 3 goats, value \$5,359; New York, 45 premises, 520 cattle, 246 hogs, 214 sheep, value \$24,378; Pennsylvania, 98 premises, 1,202 cattle, 999 hogs, 52 sheep, 4 goats, value \$56,903; Maryland, 2 premises, 31 cattle, 60 hogs, value \$1,628. The value of the animals and loss to the farmers is small compared with the commercial losses caused by closing the ports of New York, Philadelphia and Baltimore to shipments abroad of cattle and sheep, hay, straw, grain and the like, and the increase in the price of hay and straw to consumers in New England cities.

These outbreaks of foot-and-mouth disease emanating from commercial concerns are arguments in favor of State and government control in the manufacture of all biological products. While these establishments were making liquid soaps, or tincture of aconite or strychnine, they were producing products of little or no danger, except when poisonous drugs were prepared, and then there was no danger except to the individuals using them, but when these concerns turn their

attention to supplying the demand for biological products it is very much like a small boy playing with a buzz saw.

Diphtheria antitoxin, vaccine virus and similar products should be prepared only in State laboratories by men who put honor above dollars, and have something at stake in their reputation as scientists. Having foot-and-mouth disease escape from these commercial establishments twice within less than a decade has cost the country millions of dollars, to say nothing of the danger to human health from contaminated vaccine virus, and it is time a halt was called upon this system, and some method of controlling these disasters instituted.

RABIES.

During the year ending Nov. 30, 1908, rabies has continued to be very prevalent and troublesome, but has diminished somewhat from the preceding year.

The report for the year ending Nov. 30, 1907, showed that there were still in quarantine 209 dogs, 1 cow, 2 horses and a cat. Of these, 186 dogs, 2 horses and the cat were later released from quarantine, and the cow and 20 dogs were killed by the owners or died from some other cause than rabies, and 3 dogs developed this disease and either died of it or were killed.

The following table shows the extent to which the disease has prevailed, exclusive of Boston, during the past year: —

	Dogs.	Horses.	Cattle.	Swine.	Cats.	Goats.
Killed or died with rabies, . . .	454	5	32	14	1	1
Killed by owners or died in quarantine, not rabid.	412	—	8	9	10	1
Reported as rabid, but found free from disease.	27	—	4	—	2	—
Released from quarantine, . . .	402	4	3	1	2	—
Animals still in quarantine, . . .	82	—	4	1	5	—
Totals,	1,377	9	51	25	20	2
Grand total,	1,484	—	—	—	—	—

In addition to the animals there have been at least 5, possibly 6, cases of rabies among humans, 2 in Boston, 1 in Newton, a little girl from Southbridge at the Worcester Hos-

pital and an old man in Bernardston. None of the persons infected supposed the dogs to have been rabid from which the infection was received, except the Bernardston man. He started to take the Pasteur treatment but changed it for Christian Science treatment, and died.

In addition to these animals a herd of swine was appraised and killed in Lexington, numbering 78 head, and paid for from the county dog fund after 9 had died of rabies as the result of a rabid dog entering the premises and biting a number of them. The 9 pigs that had rabies are included in the table; the others are not included in the figures there given.

The veterinarian of the Boston board of health reports 50 cases of rabies in dogs in that city during the year, making a total for the entire State of 504 mad dogs. The total number of dogs having rabies during the year ending Nov. 30, 1907, in Massachusetts, including Boston, was 741, showing a decrease of 237 cases.

The table given above also shows an improved state of affairs at the end of the year, as there were only 92 animals in quarantine Dec. 1, 1908, compared with 213 the corresponding date of 1907. It is hoped that this diminution will continue until the outbreak is over, when the malady will undoubtedly remain quiescent for a number of years, to reappear when another surplus of susceptible dogs has grown up; that is, it will do so if history repeats itself, and it is probable that it will.

During 1908 Dr. Frothingham has examined the brains of 166 animals for rabies, of which 135 have proved positive or probable cases and 31 have proved to be negative.

At the time of writing this report the situation seems to be better than for some time, and it is hoped that the outbreak is subsiding. There have not been any cases west of Worcester for a number of months, and very few cases north of Boston. The more recent troubles have been in Marlborough, Southborough, Hudson, Sudbury, Stow and Framingham, as one center. All these towns have issued orders to have dogs properly and securely muzzled or restrained from running at large, some of which expire Jan. 1 and some Feb. 1, 1909. The Framingham order expires about April 1. The

other locality where rabies exists is Boston, and some of the cities and towns to the south and west. Orders to keep dogs properly and securely muzzled or restrained from running at large have been issued by the cities and towns of Newton, Brookline, Watertown, Waltham, Weston, Wellesley, Needham, Milton and Quincy. There seems to be at last a decided intention on the part of the local authorities in most places to enforce these orders. The mayor and aldermen of Boston issued an order October 21 that dogs must be muzzled or restrained from running at large for three months, but for some reason it does not seem to have been enforced, and it appears to have been a miserable and lamentable farce. It is to be regretted that the principal city of the Commonwealth cannot enforce such an order in co-operation with the surrounding cities and towns. This is the second time in less than two years that the Chief of the Cattle Bureau has succeeded in prevailing upon the local authorities in cities and towns adjoining Boston to issue orders requiring dogs to be properly and securely muzzled or restrained from running at large when the mayor and aldermen of Boston have issued similar orders, simply to have the best results obtainable lost by the failure of the order in Boston to accomplish much of anything. A few of the better citizens obey the order by keeping their dogs on leash, or by providing suitable muzzles, others use the figure 8 strap unriveted, which is not an effective muzzle, while the lawless element in the community pays absolutely no attention to the order whatever.

The only other center of any importance just now is Salem, where it is hoped a muzzling order will be put in force.

At a recent conference of the Brookline selectmen, the chief of police of Brookline, the inspector of animals of the town, and the Chief of the Cattle Bureau, it was decided that the figure 8 strap arrangement could be made effective by fitting it to the dog's nose and having it riveted, but when it is not riveted it is not an effective muzzle. The wire and other forms of strap muzzle are more desirable. A riveted figure 8 strap muzzle tight enough to prevent a dog from biting would be a very uncomfortable hot weather muzzle.

One of the largest losses to dog owners during the past year

was the destruction of the pack of hounds owned by the Myopia Hunt Club, because of an outbreak of rabies. A firm and rational stand against this disease four years ago might have prevented its spread in a great measure, and perhaps saved the lives of these and hundreds of other dogs, beside other animals and a number of human beings.

Two particular cases are worthy of special mention. One is that of a dog in Ludlow that was always kept chained; he was bitten by a rabid dog in the autumn of 1907 and was quarantined for six months; at the end of this period his owner was sent a notice of release. Four days later, March 11, 1908, he developed rabies, broke his collar and ran away, and was killed after biting a number of other dogs.

The other case was that of a dog in Milton, released from quarantine July 15, after being confined for a number of months, bitten by a rabid dog in August, from which he developed rabies and was killed October 10. If it had not been known when he was bitten in August his trouble might have been ascribed to the first bite, and have been cited as another case with a long incubative period. When rabies is prevalent in the community is it not possible that many of the cases of long periods of incubation recorded may be cases where the animal has been bitten a second time, without any one being aware of it?

There do not seem to be any further suggestions or recommendations to make in connection with this disease that have not already been made in previous reports for the last three or four years.

GLANDERS.

More horses or mules died or were destroyed because of glanders and farcy in Massachusetts, including Boston, during the year ending Nov. 30, 1908, than during any other year of which there is any record.

During 1907, 711 cases of glanders are recorded, beside which there were 26 cases which had not been disposed of. Twenty-two of these were later released and 4 were killed as having glanders. Of these 4, 1 was entered on the 1908 records, and the other 3 should be added to the 711 1907 horses, making 714 in all, 308 of which were Boston cases.

For the year ending Nov. 30, 1908, 941 horses or mules died or were killed with glanders or farcy in Massachusetts, including Boston. At first glance this looks like a very material increase for the entire State, but an analysis of the figures does not show this to be the fact.

The veterinarian of the Boston board of health reports 389 cases for the city of Boston; then there were at least 30 horses killed in outside cities and towns shortly after being purchased in Boston, either at some of the fake sales stables or at some of the weekly auctions of second-hand horses, and these animals by rights should be credited to Boston. There were also 21 horses or ponies killed at Revere during the summer which cannot fairly be credited to Massachusetts, as they belonged to a Wild West show from Oklahoma, and were never allowed off the grounds upon which the exhibition was given during their stay in this Commonwealth. Adding the 389 reported by the veterinarian of the Boston board of health, the 30 that were killed in other cities or towns after being purchased in Boston and 21 from Oklahoma together makes 440 to be deducted from the total of 941, leaving only about 500 as rightfully to be credited to the State at large.

Previous to 1908 the highest number of cases of glanders or farcy recorded in Massachusetts was in 1903, when there were 860 cases, of which only 250 were reported by the veterinarian of the city of Boston, and 610 occurred outside. At that time the number of Boston cases was but about 29 per cent of the total, not adding horses that may have been bought in Boston to those reported by the veterinarian of the Boston board of health. Now, counting in horses killed soon after being bought in Boston with those reported by the veterinarian of the Boston board of health, over 46 per cent of the cases should be credited to Boston.

The total increase in the number of cases outside of Boston in the year ending Nov. 30, 1908, over the previous year, after deducting the Oklahoma horses, was 128, for which the increase in cities and towns in close proximity to Boston more than compensates, the combined increase in Everett, Chelsea, Somerville, Cambridge, Medford, Belmont, Watertown, Wal-

tham, Brookline, Newton, Needham, Hyde Park, Milton and Quincy being 140.

In addition to the cases from outside the jurisdiction of the Cattle Bureau to be credited to Boston and Oklahoma, there were a few cases from New Hampshire and 1 from Maine. The single case in Haverhill was shipped there from Maine, and 3 or 4 which were detected by the agent of the Cattle Bureau detailed to the Thursday auction in Lowell came from New Hampshire. One of the horses killed at Andover came from Manchester, N. H., was sold by a dealer in Lowell to a poor Swede in Andover, and gave glanders to the horse he was bought to mate, and both had to be killed.

The following table shows the distribution of glanders throughout the State, and the increase or decrease from the previous year in cities and towns where it occurred. It will be seen that the State is practically free from glanders west of a line drawn north and south through Worcester, as only 7 cases have been found west of there, 3 in East Longmeadow, 1 in Savoy, 1 in Orange, 1 in Holland and 1 in Sturbridge. The cases in East Longmeadow were all owned by one man, and the trouble was brought from Connecticut, and the 1 in Savoy traces to a North Adams dealer who had a case in his stable the previous year.

CITY OR TOWN.	1907.		1908.		Increase.	Decrease.
	Killed or died.	Negative.	Killed or died.	Negative.		
Acton, . . .	1	—	—	2	—	1
Andover, . . .	1	4	5	1	4	—
Arlington, . . .	1	1	2	1	1	—
Ashby, . . .	1	—	—	—	—	1
Ashfield, . . .	—	—	—	1	—	—
Ashland, . . .	—	—	1	1	1	—
Attleborough, . .	5	2	—	1	—	5

CITY OR TOWN.	1907.		1908.		Increase.	Decrease.
	Killed or died.	Negative.	Killed or died.	Negative.		
Auburn, . . .	1	—	—	1	—	1
Ayer, . . .	—	—	—	3	—	—
Barnstable, . . .	—	—	—	3	—	—
Bedford, . . .	3	14	1	—	—	2
Belchertown, . . .	—	1	—	1	—	—
Bellingham, . . .	—	—	—	1	—	—
Belmont, . . .	2	—	9	24	7	—
Berkley, . . .	1	—	—	—	—	1
Berlin, . . .	2	4	—	—	—	2
Beverly, . . .	3	—	—	—	—	3
Billerica, . . .	—	—	—	1	—	—
Blackstone, . . .	5	1	—	—	—	5
Boston, . . .	308	18	389	17	81	—
Boxborough, . . .	—	—	—	1	—	—
Braintree, . . .	1	—	2	—	1	—
Brimfield, . . .	2	—	—	—	—	2
Brookline, . . .	8	54	18	61	10	—
Cambridge, . . .	48	68	72	8	24	—
Charlton, . . .	1	1	—	1	—	1
Chelmsford, . . .	2	1	—	—	—	2
Chelsea, . . .	19	2	26	18	7	—
Chicopee, . . .	—	—	—	1	—	—
Concord, . . .	1	—	1	1	—	—
Conway, . . .	—	1	—	1	—	—
Danvers, . . .	—	—	2	3	2	—

CITY OR TOWN.	1907.		1908.		Increase.	Decrease.
	Killed or died.	Negative.	Killed or died.	Negative.		
Dartmouth, . . .	1	—	—	—	—	1
Dedham, . . .	3	—	2	—	—	1
Deerfield, . . .	1	2	—	1	—	1
Dennis, . . .	—	—	—	1	—	—
Douglas, . . .	—	—	—	1	—	—
Dover, . . .	—	—	—	7	—	—
Dracut, . . .	1	1	—	—	—	1
Dudley, . . .	4	—	—	2	—	4
Duxbury, . . .	—	—	1	2	1	—
Easton, . . .	2	—	—	1	—	2
East Longmeadow, .	—	—	3	—	3	—
Essex, . . .	1	—	—	—	—	1
Everett, . . .	4	2	20	15	16	—
Fairhaven, . . .	—	—	1	—	1	—
Fall River, . . .	6	12	22	27	16	—
Fitchburg, . . .	1	—	1	3	—	—
Foxborough, . . .	—	1	2	2	2	—
Framingham, . . .	1	—	1	—	—	—
Franklin, . . .	1	—	—	—	—	1
Gardner, . . .	—	1	—	1	—	—
Georgetown, . . .	1	—	—	—	—	1
Gloucester, . . .	—	—	1	2	1	—
Grafton, . . .	2	2	—	—	—	2
Hancock, . . .	—	—	—	2	—	—
Hanson, . . .	—	—	1	—	1	—

CITY OR TOWN.	1907.		1908.		Increase.	Decrease.
	Killed or died.	Negative.	Killed or died.	Negative.		
Hampden, . . .	—	—	—	1	—	—
Harwich, . . .	1	—	—	1	—	1
Haverhill, . . .	6	3	1	2	—	5
Hingham, . . .	1	—	5	26	4	—
Holden, . . .	1	—	1	2	—	—
Holland, . . .	—	—	1	—	1	—
Holliston, . . .	—	—	1	—	1	—
Holyoke, . . .	—	—	—	1	—	—
Hopkinton, . . .	1	—	—	1	—	1
Hudson, . . .	1	—	—	—	—	1
Hyde Park, . . .	1	—	15	24	14	—
Lancaster, . . .	—	—	2	4	2	—
Lawrence, . . .	5	2	10	7	5	—
Leicester, . . .	—	—	3	—	3	—
Leominster, . . .	—	—	—	1	—	—
Lexington, . . .	1	—	5	—	4	—
Lowell, . . .	15	4	26	79	11	—
Lynn, . . .	22	17	12	6	—	10
Lynnfield, . . .	—	1	—	1	—	—
Malden, . . .	5	3	5	1	—	—
Marblehead, . . .	—	—	—	1	—	—
Marlborough, . . .	—	1	2	1	2	—
Medfield, . . .	1	—	—	2	—	1
Medford, . . .	3	—	8	1	5	—
Medway, . . .	—	—	—	1	—	—

CITY OR TOWN.	1907.		1908.		Increase.	Decrease.
	Killed or died.	Negative.	Killed or died.	Negative.		
Melrose, . . .	1	—	1	1	—	—
Methuen, . . .	2	1	2	—	—	—
Milford, . . .	2	—	—	2	—	2
Millbury, . . .	1	—	1	—	—	—
Milton, . . .	4	4	9	41	5	—
Montague, . . .	—	—	—	1	—	—
Needham, . . .	2	—	6	—	4	—
New Bedford, . . .	5	—	11	5	6	—
Newton, . . .	12	1	27	51	15	—
North Adams, . . .	1	—	—	—	—	1
North Attleborough, . . .	9	2	1	1	—	8
Northborough, . . .	—	—	—	1	—	—
Norfolk, . . .	3	—	—	—	—	3
Norton, . . .	2	—	1	—	—	1
Norwell, . . .	—	—	1	—	1	—
Norwood, . . .	—	1	2	1	2	—
Orange, . . .	—	—	1	—	1	—
Oxford, . . .	1	1	1	1	—	—
Palmer, . . .	—	—	—	1	—	—
Paxton, . . .	—	—	—	1	—	—
Peabody, . . .	3	—	4	1	1	—
Plymouth, . . .	—	1	1	1	1	—
Princeton, . . .	1	1	—	—	—	1
Quincy, . . .	7	4	8	12	1	—
Randolph, . . .	—	—	4	10	4	—

CITY OR TOWN.	1907.		1908.		Increase.	Decrease.
	Killed or died.	Negative.	Killed or died.	Negative.		
Reading, . . .	9	—	2	—	—	7
Rehoboth, . . .	3	—	3	—	—	—
Revere, . . .	6	29	24	54	18	—
Rochester, . . .	—	2	1	1	1	—
Royalston, . . .	3	5	—	—	—	3
Salem, . . .	1	2	3	—	2	—
Saugus, . . .	1	—	5	1	4	—
Savoy, . . .	—	—	1	—	1	—
Scituate, . . .	—	—	2	—	2	—
Seekonk, . . .	2	—	1	—	—	1
Shrewsbury, . . .	5	13	—	—	—	5
Somerville, . . .	33	49	58	68	25	—
Southampton, . . .	—	—	—	1	—	—
Southborough, . . .	1	—	—	1	—	1
Southbridge, . . .	—	—	1	—	1	—
Southwick, . . .	—	—	—	1	—	—
Springfield, . . .	—	3	—	2	—	—
Stoneham, . . .	1	—	3	2	2	—
Stoughton, . . .	—	1	—	2	—	—
Sturbridge, . . .	1	—	—	—	—	1
Sudbury, . . .	—	—	1	—	1	—
Swampscott, . . .	1	3	—	—	—	1
Taunton, . . .	—	—	3	—	3	—
Townsend, . . .	—	—	—	1	—	—
Wakefield, . . .	4	1	3	2	—	1

CITY OR TOWN.	1907.		1908.		Increase.	Decrease.
	Killed or died.	Negative.	Killed or died.	Negative.		
Walpole, . . .	1	—	1	2	—	—
Waltham, . . .	2	—	7	4	5	—
Watertown, . . .	5	1	7	14	2	—
Webster, . . .	—	—	4	10	4	—
Wellesley, . . .	1	—	2	1	1	—
Wenham, . . .	1	—	—	1	—	1
Westborough, . . .	1	—	—	—	—	1
West Boylston, . . .	1	—	1	—	—	—
Westfield, . . .	—	—	—	1	—	—
Westminster, . . .	3	1	—	—	—	3
Weston, . . .	1	1	1	—	—	—
Westport, . . .	—	—	3	1	3	—
West Springfield, . . .	—	—	—	1	—	—
Westwood, . . .	1	10	1	1	—	—
Weymouth, . . .	9	4	6	28	—	3
Whitman, . . .	—	—	1	1	1	—
Winchendon, . . .	1	1	—	1	—	1
Winchester, . . .	—	—	2	13	2	—
Winthrop, . . .	5	10	4	3	—	1
Woburn, . . .	2	—	3	1	1	—
Worcester, . . .	40	20	26	3	—	14
Wrentham, . . .	—	1	—	1	—	—
Yarmouth, . . .	—	—	—	1	—	—
Totals, . . .	711	463	941	737	—	—

The above table shows 941 cases of glanders and farcy, and 737 animals released. There are also 22 horses that have not been released, as they are in stables where mallein tests are being carried on and they have not yet ceased to react, making a total of 1,700 horses and mules on the Cattle Bureau books for 1908, the considerable number released being due to the large amount of mallein testing done.

The decrease in Worcester is very gratifying, as a few years ago about 100 horses a year were killed or died there with glanders. There was a milkman's stable in Shrewsbury where there used to be glanders, and every little while a horse with the disease was killed there. A couple of years ago the horses in this stable were all mallein tested, and those that reacted were retested once a month until they ceased to react or showed physical evidence of disease and were killed. These horses were used for peddling milk in Worcester, and were evidently the cause of some of the trouble, as after this place was cleaned up the disease has decreased steadily ever since in that city.

The table shows an increase in Lowell of 11 cases, but 7 of these were reported by the agent of the Cattle Bureau who has been employed for the last year to inspect the horses sent to the Thursday auction, and were brought from out of town, therefore the real increase over the previous year has been but 4 cases.

During the year several cases have been prosecuted, the offences being for breaking quarantine, removing a horse to prevent its being inspected and disobeying an order of the Chief of the Cattle Bureau, in all of which convictions have been secured in the lower courts. Two appealed cases in Middlesex County have been settled in the higher court, one appealed case in Norfolk County remains undisposed of as yet, and an appealed case from the Lawrence police court, from October, 1907, still remains unsettled.

The reports of the renderers, which they are required to make from week to week under the provisions of section 111 of chapter 75, Revised Laws, as amended by chapter 243, Acts of 1907, are of a great deal of value, as a number of cases of glanders are reported by them every year which are

reported in no other way, and when a case is heard of in this way an agent is sent to see that the stable is properly disinfected, and if there are other horses in the stable they are inspected either by the local inspector of animals or an agent of the Cattle Bureau, provided, of course, that the case is within the jurisdiction of the Chief of the Cattle Bureau.

The renderers' reports are tabulated below:—

Reports of Rendering Companies.

RENDERING COMPANIES.	Number of Reports.	Number of Cases.	Number in Boston.	Number out of Boston.	Number outside of Boston not previously reported.
The Butchers' Rendering Company, Fall River.	3	—	—	—	—
Fitchburg Rendering Company, . .	1	1	—	1	—
William S. Higgins, Saugus, . . .	5	6	—	6	3
The Home Soap Company, Millbury, .	1	—	—	—	—
Lowell Rendering Company, . . .	17	5	—	5	—
E. W. Munroe, Rockland,	2	—	—	—	—
James E. McGovern, Andover, . . .	17	15	—	15	2
Muller Brothers, North Cambridge, .	36	95	7	88	7
W. H. Nankervis, Marlborough, . .	5	2	—	2	1
New Bedford Extractor Company, . .	10	10	—	10	4
New England Rendering Company, Brighton.	48	152	41	111	34
Peabody Tallow Company, Peabody, .	10	6	—	6	—
N. Roy & Son, South Attleborough, .	6	5	—	5	2
Whitman & Pratt Rendering Company, North Chelmsford.	26	14	—	14	1
Worcester Rendering Company, Auburn,	16	21	—	21	7
N. Ward Company, Boston,	53	345	263	82	6
Totals,	256	677	311	366	67

During the year more mallein testing has been done than in any previous year. There have been fifty stable tests. In many stables horses had been killed with glanders, and then the stable tests were inaugurated with a view to eradicating the disease. It will be seen by the following table that 75 horses with glanders or farcy were killed before making a test, that 609 were tested, of which 341 were released on the first test, 120 on the second test, 86 on subsequent tests, and that 39 were killed after the first or subsequent tests.

Stable Tests with Mallein.

CITY OR TOWN.	Number killed before making Test.	Number in Stable, First Test.	Released on First Test.	Released on Second Test.	Released on Subsequent Tests.	Killed after First or Subsequent Tests.	Months covered by Tests.	Largest Number of Tests.	Held for Further Tests.
Belmont,	3	23	17	5	-	1 ¹	1	2	-
Braintree,	-	9	6	-	-	1	-	-	2
Brookline,	2	58	40	10	2	6	7	6	-
Brookline,	1	3	3	-	-	-	-	1	-
Chelsea,	2	20	-	15	1	-	4	3	4
Dover,	1	7	3	2	2	-	2½	3	-
Dudley,	-	2	-	-	2	-	4½	5	-
Everett,	1	13	9	-	2	-	6	5	2
Fall River,	2	4	2	-	1	1	6	6	-
Fall River,	1	1	-	1 ²	-	-	2	2	-
Fall River,	-	1	1	-	-	-	-	1	-
Fall River,	1	2	-	2	-	-	2	2	-
Fall River,	-	6	5	-	1 ³	-	-	2	-
Fall River,	3	13	-	11	-	-	-	-	2
Hingham,	1	6	2	1	2	1	5	4	-
Hingham,	1	20	16	4	-	-	2	3	-
Hyde Park,	5	26	15	5	4	2	3	4	-
Lowell,	1	2	-	2	-	-	1½	2	-
Lowell,	4	72	39	17	13	2	5½	5	1
Lawrence,	1	5	4	-	1	-	5	4	-
Lancaster,	-	3	3	-	-	-	-	1	-
Lynn,	1	2	1	-	-	1	-	1	-
Milton,	2	36	19	8	9	-	5	4	-
Milton,	2	3	3	-	-	-	-	1	-
Milton,	1	2	2	-	-	-	-	1	-
Newton,	1	8	7	-	-	1	-	1	-
Newton,	1	3	1	-	1	1	8	6	-
Newton,	1	6	3	2	-	1	2	2	-
Newton,	1	8	5	-	3	-	7½	6	-
Newton,	2	24	11	7	4	2	5	4	-
Newton,	1	2	1	-	-	-	-	-	1
Quincy,	2	5	3	1	1	-	4	4	-
Quincy,	1	3	2	-	1	-	3	4	-

¹ Killed by owner, no lesions found.² Killed later.³ Died of colic.

Stable Tests with Mallein — Concluded.

CITY OR TOWN.	Number killed before making Test.	Number in Stable, First Test.	Released on First Test.	Released on Second Test.	Released on Subsequent Tests.	Killed after First or Subsequent Tests.	Months covered by Tests.	Largest Number of Tests.	Held for Further Tests.
Quincy,	1	3	3	-	-	-	-	1	-
Revere,	9	60	29	1	16	14 ¹	4	5	-
Randolph,	2	5	3	-	-	-	-	-	2
Somerville,	- ²	31	16	10	5 ³	-	4	4	-
Somerville,	1	11	2	5	2	2	2½	3	-
Somerville,	3	1	-	-	1	-	7	6	-
Somerville,	2	21	12	4	5	-	6	6	-
Somerville,	2	10	4	-	-	1	-	-	5
Stoneham,	1	1	1 ⁴	-	-	-	-	1	-
Webster,	1	8	8	-	-	-	-	1	-
Webster,	1	2	2	-	-	-	-	1	-
Weymouth,	2	8	7	-	1	-	5½	5	-
Weymouth,	1	18	18	-	-	-	-	1	-
Watertown,	1	12	12	-	-	-	-	1	-
Winchester,	1	18	-	7	6	1	4	4	4
Winthrop,	1	1	1	-	-	-	-	1	-
Worcester,	-	1	-	-	-	1	6½	5	-
50 stables,	75	609	341	120	86	39	-	-	23

¹ No lesions in two.² Horses from infected stable put in here.³ Three of the horses released contracted glanders later and were killed.⁴ Died after first test.

One of the most interesting tests was that at Revere, as these animals belonged to a Wild West Show from Oklahoma, which was giving exhibitions at Revere Beach during the summer. Glanders was discovered among these animals just before Decoration Day and 9 were killed at once. The remaining animals, 52 in all, were tested with mallein and 31 reacted. Later 8 new purchases were tested, none of which reacted. There were two stables on the grounds where the exhibition was given, and the animals were separated, the non-reactors being put in one barn, the reactors in the other, and were kept apart as well as circumstances permitted. One

reactor was released on a second test and 16 were released on subsequent tests. Fourteen reactors were killed, of which 2 showed no lesions of disease on autopsy and were paid for by the State on a valuation of \$100 each.

The interesting feature of the case was that the proprietor of the show wished to leave the State toward the end of September with the animals that remained apparently healthy, and after writing to the Bureau of Animal Industry at Washington about the case a reply was received saying that animals that reacted to mallein could not be shipped out of Massachusetts. As a number were still reacting, this left the Chief of the Cattle Bureau with the choice of releasing them from quarantine, or killing them and having the Commonwealth reimburse the owner for the value of the animals in which no lesions could be found. The Chief of the Cattle Bureau could not allow them to be disposed of and undertake to keep track of these animals after the show broke up, as he occupied the peculiar position of a State official without authority over the whole State. After careful deliberation the following letter was written:—

[U-71.]

COMMONWEALTH OF MASSACHUSETTS,
CATTLE BUREAU OF THE STATE BOARD OF AGRICULTURE,
STATE HOUSE, BOSTON, Aug. 25, 1908.

Dr. A. D. MELVIN, *Chief United States Bureau Animal Industry,*
Washington, D. C.

SIR:—Your letter of August 21 duly received, relative to the horses and ponies in the Wild West Show at Wonderland, Revere.

I find I wrote you promptly May 29 last relative to the outbreak of glanders in the stock at Wonderland. I have had the animals that have shown physical evidence of disease killed, and have kept the others under observation in quarantine since then, with the exception of half a dozen Shetland ponies which he has disposed of, only one of which ever reacted to mallein, and these were disposed of through a misunderstanding.

Inasmuch as these animals came from Oklahoma, and seem to be only in transit through the State as a part of an itinerant show, and inasmuch as the owner is not a resident of Massachusetts, but is simply here with his exhibition, it seems to me a case where the United States Bureau of Animal Industry ought to step in and take charge of the matter. The reacting animals and those that have not

reacted are still at Wonderland, and the owner is anxious to leave the State the 20th of September, and is desirous of taking his stock away with him, and wishes to stop in Virginia and Ohio on the way home and give exhibitions in those States before returning to Oklahoma. If he were a resident of Massachusetts, and had a permanent stable here, I should test his entire lot of horses, as I have already done, separate those that reacted from those that gave no reaction, and test them once a month until they ceased to react, or until they showed some physical evidence of glanders and I ordered them killed.

I do not like the idea of ordering the reacting horses that he has here killed, and having to pay for those in which no satisfactory lesions of glanders could be detected out of the appropriation of the Cattle Bureau. At the same time, if he could not take them away with him from this State and wanted to sell them, I fear they might go into stables where I would have no control over them, particularly as I do not have jurisdiction over the entire State of Massachusetts; but if any of these animals were taken into the city of Boston they would be entirely beyond my control, as much as if they were taken to Oklahoma. If, therefore, there is any way for the Bureau of Animal Industry to send an agent here to investigate this outbreak, and determine what is best to be done in the matter, I would like very much to put the whole affair in your hands.

Hoping to hear from you at as early a date as possible, I remain

Yours respectfully,

AUSTIN PETERS,

Chief of Cattle Bureau.

As a result of this correspondence the Chief of the United States Bureau of Animal Industry arranged to send an agent to test the animals that had reacted at the end of September, with the understanding that any that did not react to his test could be removed by the owner, and that the State of Massachusetts would kill the reactors. An agent of the United States Bureau of Animal Industry was sent from Washington the end of September to test the animals about which there was any question. He tested 22, of which 18 gave no reaction and were released, and 4 reacted and were killed by the State authority; lesions were found in 3; none could be found in 1 and the Commonwealth paid for it. Thus what at one time seemed to be a rather complicated state of affairs was cleared up. It seems to be another argument in favor of one general law for the State, and a repeal of the special legislation enacted a few years ago to

please the Boston board of health by putting glanders and farcy and rabies under its control, when already a competent agency existed for the control of these diseases, supported by ample law, and stronger laws than the city board of health has to sustain it.

For the past year an agent of the Cattle Bureau has been present at the horse auction in Lowell and examined all the horses offered there at the weekly sales, with the result that 7 cases of glanders have been discovered and killed before going on to do further mischief. Some of these animals had recently passed through the auction sales stables in Boston, others killed at other places outside of Boston during the year were purchased at auction in Boston, yet the Chief of the Cattle Bureau has absolutely no authority to employ an agent to inspect horses offered for sale in Boston, although many of them go to outside cities and towns. He has no authority to trace the history of a glandered horse after he traces it to a sales stable in Boston, or any power to investigate, and if he finds that the seller knew or had reasonable cause to believe that a horse had glanders, he has no right to prosecute him for selling such an animal. He has no right to prosecute any one for removing a glandered horse from Boston to another city or town, or to prosecute any one for breaking quarantine by removing a quarantined horse from Boston to another city or town. There is something more to the suppression of glanders than the authority to kill an animal because it has glanders or farcy, and it would seem that the changes made in the law in 1897 and 1899 should never have been made. To show how soon glanders develops in some of the cheap class of horse sent to these sales, it is interesting to note that 2 horses found to be glandered at the Lowell auction sales had been sold there two or three weeks before, and at that time passed inspection.

There was quite a discussion before the committee on agriculture of the Legislature last winter as to whether the State should or should not pay for glandered horses. A change in the law to provide payment in a limited sum was favored by the Expressmen's League and some stable keepers and horse owners, and evidence produced to show that this

is done in some States, and that some good authorities think that paying something for animals of this kind is a help in eradicating the disease, but the committee was of the opinion that a glandered horse had no value, and that it was therefore not necessary to change the law.

Dr. Langdon Frothingham has continued to do the laboratory work in connection with glanders, as for the past ten or twelve years.

ANNUAL INSPECTION OF NEAT CATTLE, FARM ANIMALS AND PREMISES UPON WHICH THE FORMER ARE KEPT.

Late in September the following circular letter was sent to the inspectors of animals in the cities and towns of the State, together with the necessary books in which to record the results of their work, and blank forms of certificates of health to be given owners in conformance with section 18, chapter 90 of the Revised Laws:—

COMMONWEALTH OF MASSACHUSETTS,
CATTLE BUREAU OF THE STATE BOARD OF AGRICULTURE,
ROOM 138, STATE HOUSE, BOSTON, Sept. 15, 1908.

DIRECTIONS TO INSPECTORS OF ANIMALS.

Inspectors of animals are hereby directed to make a general inspection of the neat stock in their respective towns, and incidentally other farm animals, to commence October 1 and to be completed before the fifteenth day of November, as required by chapter 90 of the Revised Laws.

Wherever inspectors examine animals and find them free from contagious disease they will give owners certificates of health, as provided for in section 18 of the law, from the book of blanks (Form No. 2) furnished for that purpose. Books will also be provided (Form No. 1) for carrying out the provisions of sections 17 and 24 of chapter 90 of the Revised Laws.

Inspectors will not say on any report, "Same as last year," but will make a full and complete report on every place inspected, including all dimensions and measurements provided for on the blank, and answer in full all questions as to the light, ventilation, sanitary surroundings and water supply, as well as the number of cattle kept in each stable, and give a complete list of other animals in spaces provided in the book.

Inspectors of animals are not to quarantine any cattle as tuberculous unless they show sufficient evidence of disease to make it

possible to condemn them on a physical examination, or show evidence of tuberculosis of the udder.

It is also requested that, if cases of tuberculosis in animals are found, inspectors keep a record of them for a few days, and then when animals are quarantined several can be quarantined at once, and duplicates sent here, so that the agent of the Cattle Bureau can see a number at one visit, instead of having to go every two or three days to see one animal at a time, thus avoiding running up expenses as much as possible.

It is also the duty of inspectors of animals to quarantine cattle brought into this State from without the limits of the Commonwealth if the owner has not had a permit from this Bureau, the same to remain in quarantine until ordered released by the Chief of the Cattle Bureau or his agent.

Inspectors of animals, in case they suspect the presence of any contagious disease among any species of domestic animals, are to quarantine such animals and send duplicates to the Chief of the Cattle Bureau.

Contagious diseases, under the provisions of section 28, chapter 90 of the Revised Laws, include glanders, farcy, contagious pleuropneumonia, tuberculosis, Texas fever, foot-and-mouth disease, rinderpest, hog cholera, rabies, anthrax or anthracoid diseases, sheep scab and actinomycosis.

The necessary books for the inspection will be forwarded at once. Please report immediately if not received by October 1. When inspection is completed return book, Form No. 1, at once by express.

AUSTIN PETERS,
Chief of Cattle Bureau.

The following table embodies a condensed report of the doings of the inspectors of animals in making the annual inspection, which complies with the requirements of section 24, chapter 90, Revised Laws:—

REPORT OF INSPECTION OF ANIMALS, STABLES, ETC., REQUIRED BY SECTION 24, CHAPTER 90, REVISED LAWS.

CITY OR TOWN.	Number Herds in- spected.	Number Neat Cattle Inspected.	Number Cows in- spected.	Number Herds kept Clean and in Good Condition.	Number Sheep in- spected.	Number Swine in- spected.	Number Goats in- spected.	Number Stables in- spected.	Number Stables well located.	Number Stables well lighted.	Number Stables well ventilated.	Number Stables kept Clean.	Number Stables with Good Water Sup- ply.	Number Stables in- proved since last Report.
Abington,	100	320	287	91	-	72	-	106	93 ¹	36 ¹	17 ¹	86 ¹	103 ¹	3
Acton,	105	1,113	881	93 ¹	6	117	-	117	112 ¹	97	116	112	109	58
Acushnet,	119	567	459	91 ¹	-	160	-	121	119	73 ¹	94 ¹	102	111	3
Adams,	84	1,058	800	71 ¹	104	599	-	80	66	50	64	77 ¹	77 ¹	2
Agawam,	187	1,515	1,116	179 ¹	6	546	-	205	179	186	194	198	200 ¹	18
Alford,	41	344	284	36 ¹	199	101	-	44	26	35 ¹	44	43	44	-
Amesbury,	97	544	408	90	33	118	2	97	82	95	93 ¹	93	97	1
Amherst,	132	1,710	1,386	127 ¹	6	287	-	141	135	125	129	141	141	14
Andover,	164	1,309	1,003	161	18	460	-	178	175	148	175	172	177	3
Arlington,	62	149	140	62	-	83	1	62	53 ¹	56	50	57	62	2
Ashburnham,	119	618	403	90 ¹	39	195	3	120	107	81	97	104	87	2
Ashby,	133	778	578	84 ¹	170	102	-	136	54	92	118	90 ¹	134 ¹	3
Ashfield,	156	1,362	833	141	775	262	91	175	146	147	152	164	163	1
Ashland,	81	382	313	75	-	115	-	82	78	64	68	73	67	4

¹ Incomplete report.

REPORT OF INSPECTION OF ANIMALS, STABLES, ETC. — *Continued.*

City or Town.	Number Herds in- spected.	Number Neat Cattle inspected.	Number Cows in- spected.	Number Herds kept Clean and in Good Condition.	Number Sheep in- spected.	Number Swine in- spected.	Number Goats in- spected.	Number Stables in- spected.	Number Stables well located.	Number Stables well lighted.	Number Stables well ventilated.	Number Stables kept Clean.	Number Stables with Good Water Sup- ply.	Number Stables im- proved since Last Report.
Athol, .	138	729	506	127	35	210	-	139	121	66	104	130	126	3
Attleborough, .	153	1,032	909	146 ¹	1	702	-	152	141	144	148 ¹	146	152	2
Auburn, .	89	622	518	59 ¹	15	73	1	78	71	69 ¹	77	72 ¹	74 ¹	19
Avon, .	60	221	207	44 ¹	8	72	3	61	25	25	46	53 ¹	59 ¹	3
Ayer, .	17	125	91	22 ¹	-	69	-	26	23	21	20 ¹	21	23	1
Barnstable, .	228	629	456	-	38	417	3	230	210	226	226	224	224	-
Barre, .	76	1,772	1,208	76	39	198	15	85	82	75	81	79	83	19
Becket, .	71	465	254	71	276	94	59	72	55	67	72	72	72	-
Bedford, .	58	569	467	55 ¹	-	2,752	2	58	29 ¹	56	42 ¹	54 ¹	58	4
Belchertown, .	281	2,042	1,613	266	42	495	5	308	268	248	307	294	308	15
Bellingham, .	98	642	498	86	-	122	-	119	111	65	108	106 ¹	119	2
Belmont, .	31	228	215	31	-	250	-	31	28	23	25	30	13 ¹	1
Berkley, .	112	427	369	111	25	138	1	112	113	112	112	112	112	1
Berlin, .	95	717	560	89 ¹	50	68	-	101	37	84	98	99	101	3
Barnardston, .	59	664	421	52 ¹	173	121	-	60	59 ¹	38	39	55	54	-
Beverly, .	66	508	449	62 ¹	-	56	-	65	61 ¹	56	64	62	62 ¹	5

BillERICA,	119	819	618	115	2	496	5	119	114	115	109	111	119	-
Blackstone,	72	439	365	67	-	117	-	72	69	45	44	64	55	3
Blandford,	113	870	532	105 ¹	303	153	-	127	95	113	122	125	124	5
Bolton,	85	683	561	30 ¹	12	1	4	84	30 ¹	62 ¹	60 ¹	69 ¹	5 ¹	1
Boston,	195	899	852	186	143	202	-	203	8	6	7	170	- ¹	-
Bourne,	74	161	146	7 ¹	-	17	-	74	71 ¹	74	74	73 ¹	74	-
Boxborough,	47	627	369	46	19	61	49	48	47	46	48	48	45	8
Boxford,	75	595	454	62 ¹	16	129	-	77	76	59	67	75	77	2
Boylston,	61	697	510	59	1	259	2	63	21	61 ¹	63	63	62 ¹	3
Braintree,	99	479	449	93 ¹	-	137	-	101	90	97	97	93	101	4
Brewster,	79	165	111	79	15	66	2	80	61	78	80	72	80	-
Bridgewater,	175	717	560	161 ¹	31	884	4	173 ¹	157 ¹	161 ¹	159 ¹	156 ¹	166 ¹	1
Brimfield,	110	1,004	714	98 ¹	41	122	2	110	92	53	91 ¹	110	109	-
Brockton,	81	983	780	76 ¹	8	615	7	91	78	81 ¹	70 ¹	74 ¹	89 ¹	-
Brookfield,	118	875	580	95 ¹	28	236	-	120	108 ¹	96	23 ¹	100 ¹	113 ¹	6
Brookline,	36	178	145	30 ¹	26	52	12	38	33	32	29	31	38	-
Buckland,	130	851	572	96 ¹	526	223	1	145	134	80	25 ¹	121 ¹	144	1
Burlington,	49	445	333	44 ¹	1	2,678	3	49	48	47	49	48	49	-
Cambridge,	19	108	105	19	-	-	-	22	20	21	21	21	22	-
Canton,	119	547	456	117	-	128	43	119	110	117	118	119	119	-
Carlisle,	63	576	495	60	-	29	-	69	67	47	46	52	67	-
Carver,	84	195	136	79	15	76	1	83	78	82	82	80	78	1

¹ Incomplete report.

REPORT OF INSPECTION OF ANIMALS, STABLES, ETC. — *Continued.*

CITY OR TOWN.	Number Herds in- spected.	Number Neat Cattle inspected.	Number Cows in- spected.	Number Herds kept Clean and in Good Condition.	Number Sheep in- spected.	Number Swine in- spected.	Number Goats in- spected.	Number Stables in- spected.	Number Stables well located.	Number Stables well lighted.	Number Stables well ventilated.	Number Stables kept Clean.	Number Stables with Good Water Sup- ply.	Number Stables im- proved since last Report.
Charlemont,	128	888	552	34 ¹	554	332	—	139 ¹	120	136 ¹	137 ¹	138 ¹	136 ¹	1
Charlton,	141	1,725	1,167	138	57	217	—	148	144 ¹	143	133	131	93 ¹	4
Chatham,	73	144	123	70 ¹	—	100	3	75	70	65	71	73	69	4
Chelmsford,	87	889	742	81 ¹	1	107	—	110	110	91	105	107	110	10
Chelsea,	29	211	206	26	—	85	—	35	32	29	29	26	29	2
Cheshire,	122	1,410	994	111 ¹	54	388	2	109	92 ¹	100	108	109	93	21
Chester,	80	545	282	79	293	130	12	102	85	52 ¹	99 ¹	98 ¹	102	—
Chesterfield,	96	821	444	92	3	176	1	119	90	75	110	113	115 ¹	4
Chicopee,	86	528	411	77 ¹	—	368	—	86	74	70 ¹	77 ¹	79 ¹	77 ¹	3
Chilmark,	53	269	118	52 ¹	2,054	17	—	50	48	34	50	49 ¹	49	1
Clarksburg,	84	420	291	83 ¹	—	232	4	85	73	82	85	85	85	1
Clinton,	45	91	76	45	1	67	2	45	42	36	38	44	45	1
Cohasset,	108	262	209	41 ¹	—	87	—	109	86	52	20	26	37	10
Colrain,	187	1,717	956	85	1,364	563	3	201	175	82	184	99	201	2
Concord,	148	1,550	1,275	140 ¹	—	591	—	187	182	183	184	156	155	—
Conway,	90	1,368	949	— ¹	694	164	—	82	69 ¹	73	76	75	43 ¹	—

Cumington,	89	793	508	83 ¹	85	128	7	106	72 ¹	70	92	95	105	1
Dalton,	29	679	484	29	56	154	-	41	28	40	41	41	41	-
Dana,	67	327	209	67	9	71	-	72	72	43	72	72	72	2
Danvers,	68	927	875	68	-	4	-	73	69 ¹	73	73	73	73	-
Dartmouth,	194	1,933	1,696	180	70	486	6	205	196	169	145	188	189	32
Dedham,	97	589	545	79 ¹	-	410	-	101	75	87 ¹	85 ¹	84	92	3
Deerfield,	120	1,054	781	107 ¹	3	288	-	123	104 ¹	54	116	118	97 ¹	8
Dennis,	107	211	155	88 ¹	-	242	-	102	88 ¹	95	92 ¹	99 ¹	100 ¹	11
Dighton,	106	479	365	105	27	93	2	119	114	118	116	119	118	-
Douglas,	102	366	271	72 ¹	-	155	-	101	74	51	92	73	97 ¹	-
Dover,	49	416	366	29	32	181	-	50	43	48	44	50	48	1
Dracut,	72	1,056	932	69	-	401	-	73	71	69	69	73	73	1
Dudley,	119	1,042	866	49 ¹	-	142	-	112	94 ¹	60 ¹	52 ¹	47 ¹	62 ¹	11
Dunstable,	63	556	405	57	17	171	-	71	70	60	71	70	65	4
Duxbury,	118	342	268	113 ¹	18	56	-	117	102 ¹	103	107	109	111 ¹	-
East Bridgewater,	171	735	596	142 ¹	4	380	9	191	67	122	148	165	185	24
Eastham,	52	128	87	49 ¹	-	66	-	52	44 ¹	34	32	48	41	-
Easthampton,	89	845	641	84 ¹	-	232	-	97	72	97	97	96 ¹	97	-
East Longmeadow,	66	600	479	64	4	123	-	66	56	43	65	63	66	-
Easton,	156	804	653	152 ¹	5	22	-	182	169	179	179	179	182	-
Edgartown,	58	268	204	58	786	204	3	65	65	63	64	61	64	7
Egremont,	95	908	728	95	138	108	9	98	60	98	98	96	95	7

¹ Incomplete report.

Gill,	.	.	.	.	.	.	74	846	529	421	235	215	-	75	72	48	66 ¹	58	73	2
Gloucester,	.	.	.	.	.	.	103	610	567	93	-	94	-	105	99	64	59	66	31 ¹	20
Goshen,	.	.	.	.	.	.	46	378	188	33 ¹	60	132	-	36 ¹	31	26	34	27 ¹	29 ¹	-
Gosnold,	.	.	.	.	.	.	6	38	26	6	1,500	38	-	7	7	6	7	6	7	-
Grafton,	.	.	.	.	.	.	103	1,387	1,080	58 ¹	116	364	2	108	97	61	16	45	105 ¹	17
Granby,	.	.	.	.	.	.	118	1,326	1,137	118	50	158	1	135	135	123	135	133	134	2
Granville,	.	.	.	.	.	.	91	470	303	90	3	128	-	95	85	87	95	94	94	5
Great Barrington,	.	.	.	.	.	.	120	1,705	1,148	104 ¹	49	621	-	145	89 ¹	87	89 ¹	103	133 ¹	5
Greenfield,	.	.	.	.	.	.	123	1,471	1,084	28 ¹	1,289	439	-	122	117 ¹	55	92 ¹	41 ¹	121	-
Greenwich,	.	.	.	.	.	.	69	368	299	64	-	72	-	73	70	57	72	69	72	46
Groton,	.	.	.	.	.	.	131	932	617	99 ¹	86	126	-	136	130	102	122	102	99	9
Groveland,	.	.	.	.	.	.	69	345	262	62 ¹	35	105	-	72	68 ¹	53	65	57 ¹	72	1
Hadley,	.	.	.	.	.	.	205	1,762	1,171	169 ¹	126	620	-	272	238	188	240 ¹	245 ¹	259 ¹	2
Halifax,	.	.	.	.	.	.	66	167	120	65 ¹	-	34	-	66	31	66	65 ¹	64	66	-
Hamilton,	.	.	.	.	.	.	49	284	229	43	-	117	-	55	51	38	46	45	55	6
Hampden,	.	.	.	.	.	.	83	689	453	82	1	107	-	87	80	86	87	86	87	1
Hancock,	.	.	.	.	.	.	59	635	415	47	565	104	-	98	68	71	85	79	97	11
Hanover,	.	.	.	.	.	.	119	284	250	115 ¹	18	165	4	117	108 ¹	117	117	115	117	3
Hanson,	.	.	.	.	.	.	92	217	188	87	-	142	4	92	89	91	92	88 ¹	83	5
Hardwick,	.	.	.	.	.	.	121	2,393	1,639	117 ¹	230	338	-	134	132 ¹	83	131	112 ¹	134	1
Harvard,	.	.	.	.	.	.	134	1,489	1,086	78 ¹	7	10	-	146	143	118	143	104	132 ¹	8
Harwich,	.	.	.	.	.	.	102	236	172	93 ¹	1	75	2	102 ¹	52 ¹	81 ¹	91	101	102	4

¹ Incomplete report.

REPORT OF INSPECTION OF ANIMALS, STABLES, ETC. — *Continued.*

City or Town.	Number Herds in- spected.	Number Neat Cattle inspected.	Number Cows in- spected.	Number Herds kept Clean and in Good Condition.	Number Sheep in- spected.	Number Swine in- spected.	Number Goats in- spected.	Number Stables in- spected.	Number Stables well located.	Number Stables well lighted.	Number Stables well ventilated.	Number Stables kept Clean.	Number Stables with Good Water Sup- ply.	Number Stable Im- proved since Last Report.
Hatfield,	130	368	338	125	-	218	-	130	127	130	130	130	130	1
Haverhill,	296	1,341	1,183	291	45	671	20	297	233	274	270	292	295	47
Hawley,	78	683	451	651	214	115	-	93	851	64	841	91	891	4
Heath,	84	835	455	801	413	112	-	94	69	92	93	92	93	2
Hingham,	149	605	494	1451	25	270	-	155	133	144	145	154	155	1
Hinsdale,	92	840	540	83	33	123	6	92	53	60	65	901	92	1
Holbrook,	70	227	187	221	-	107	-	70	38	53	641	64	67	1
Holden,	134	849	601	701	-	187	1	139	1281	85	931	451	1071	10
Holland,	31	200	96	31	63	47	-	34	29	19	34	32	32	-
Holliston,	141	825	593	136	6	141	-	141	1271	108	73	95	140	7
Holyoke,	82	747	571	80	-	131	1	82	571	68	69	82	82	-
Hopedale,	26	102	81	151	-	42	1	26	24	25	25	23	26	-
Hopkinton,	135	640	473	671	-	194	-	136	1341	71	71	71	1261	1
Hubbardston,	102	883	601	100	20	179	80	100	57	99	99	100	100	-
Hudson,	39	270	206	341	-	122	-	39	37	31	31	33	341	2
Hull,	16	56	47	15	-	32	-	16	12	51	41	14	-1	-

Huntington,	93	658	364	841	245	152	-	100	75	84	100	94	80	4
Hyde Park, .	17	91	86	15	-	-	-	20	20	13	11	19	18	-
Ipswich, .	124	804	680	123 ¹	15	178	5	127	122 ¹	127	126 ¹	126 ¹	125 ¹	2
Kingston, .	95	271	215	64 ¹	18	103	2	97	86	64	50 ¹	51	97	8
Lakeville, .	98	337	237	80	1	133	1	98	96	78	96	73	97 ¹	1
Lancaster, .	67	641	509	47 ¹	16	133	-	68	64	43	63	56	55	2
Lanesborough,	61	976	737	60	11	218	-	74	51	56	66	72	74	20
Lawrence, .	8	112	87	8	1	20	1	8	7	7	7	7	8	-
Lee, .	169	821	607	160 ¹	237	326	22	173	136 ¹	167	171 ¹	173	133	-
Leicester, .	55	549	409	54	-	80	-	57	54	57	57	57	55	6
Lenox, .	23	484	367	27 ¹	-	29	-	28	18	23	23	28	27 ¹	11
Leominster, .	107	1,163	833	42	12	133	-	122	114	84	88	62	96	-
Leverett, .	105	631	427	96 ¹	23	186	-	112	102	86	111	109	97	7
Lexington, .	75	1,049	968	65	3	483	15	75	73	52	56	67	50 ¹	1
Leyden, .	75	620	343	75	458	161	-	81	61	70	80	79	81	2
Lincoln, .	84	937	846	68 ¹	3	678	-	84	77 ¹	51	61	48	48 ¹	2
Littleton, .	81	1,362	1,041	79 ¹	-	77	-	81	80	80	81	81	78	-
Longmeadow,	48	253	216	- ¹	-	106	-	52	37	42 ¹	46 ¹	51 ¹	52	-
Lowell, .	41	360	333	38	3	555	-	41	35	28	31	37	39	2
Ludlow, .	124	759	680	126	22	233	-	131	108	92	127	125	103	7
Lunenburg, .	136	1,143	805	128	17	262	4	140	136	115	135	132	139	1
Lynn, .	74	284	274	49	-	171	2	75	73	49	58	45	75	4

¹ Incomplete report.

REPORT OF INSPECTION OF ANIMALS, STABLES, ETC. — *Continued.*

City or Town.	Number Herds in- spected.	Number Neat Cattle inspected.	Number Cows in- spected.	Number Herds kept Clean and in Good Condition.	Number Sheep in- spected.	Number Swine in- spected.	Number Goats in- spected.	Number Stables in- spected.	Number Stables well located.	Number Stables well lighted.	Number Stables well ventilated.	Number Stables kept Clean.	Number Stables with Good Water Sup- ply.	Number Stables im- proved since Last Report.
Lynnfield,	27	320	289	25 ¹	-	51	-	27	26	27	26	27	26 ¹	-
Malden,	40	244	244	21 ¹	-	-	-	46	45	27 ¹	21 ¹	28 ¹	45 ¹	-
Manchester,	19	92	79	19	-	43	5	20	18	20	20	20	20	-
Mansfield,	119	407	316	100 ¹	-	231	6	123	114	100	112	106 ¹	112	4
Marblehead,	52	343	294	51	-	254	3	51	44	25	33	44	13	19
Marion,	38	150	122	33	-	169	1	38	36	26 ¹	25 ¹	26 ¹	37 ¹	-
Marlborough,	186	1,176	913	176	34	616	5	204	192	174	183	189	202	13
Marshfield,	143	456	333	141 ¹	8	348	6	149	136	127	137 ¹	140 ¹	149	-
Mashpee,	18	27	16	18	-	28	-	18	16	11	18	16	18	1
Mattapoisett,	86	320	229	79	-	171	4	87	82	74	79	81	85	4
Maynard,	27	143	112	22	-	172	-	27	23	26	26	25	26	3
Medfield,	68	556	422	68	-	369	-	74	72	73	73	72	74	1
Medford,	66	526	500	65	1	22	5	76	70	56	53	75	76	-
Medway,	118	526	403	102 ¹	-	45	-	118	115	101 ¹	104 ¹	106 ¹	116	3
Melrose,	26	102	95	15	-	-	-	26	22	15	12	11	26	-
Mendon,	86	540	425	70	-	147	-	97	97	54	60	74	95	8

Merrimac,	56	345	256	45 ¹	-	90	-	58	51 ¹	46	8	46	58	1
Methuen,	169	1,481	1,301	77	1	742	12	173	164	74	52	66	172	-
Middleborough,	302	826	640	292	11	479	12	303	292	297	300	301	302	3
Middlefield,	50	509	221	46	286	162	3	53	40	39	53	50	53	3
Middleton,	53	376	317	44 ¹	2	407	21	53	52	50	49 ¹	52	53	-
Milford,	131	409	359	127	2	232	5	131	122	109	105	100	129	5
Millbury,	134	1,007	818	123	2	260	21	148	126	134	134	136	144	8
Millis,	73	673	507	33 ¹	16	67	-	74	72	34	27	40	61 ¹	5
Milton,	106	764	720	106	92	127	-	110	99	108	108	110	110	1
Monroe,	25	168	96	25	54	50	-	25	23	24	25	24	25	2
Monson,	198	1,576	1,073	181 ¹	5	678	19	246	222	169	212	203 ¹	239 ¹	6
Montague,	145	893	524	102 ¹	15	328	-	153	143	80	72	116	136	6
Monterey,	74	560	391	71 ¹	154	82	-	87	46 ¹	71 ¹	79 ¹	83	86	3
Montgomery,	34	307	235	34	42	20	-	35	23	35	35	35	35	1
Mount Washington,	15	88	62	14	6	73	-	16	10 ¹	7	15	15	16	-
Nahant,	6	9	9	6	-	-	-	6	6	5 ¹	6	6	6	-
Nantucket,	53	448	344	53	131	81	6	53	51	49	53	53	53	3
Natick,	96	518	431	80	-	92	-	98	87	29	25	54	96	1
Needham,	93	588	528	73 ¹	12	283	-	97	79	44	80	80 ¹	82 ¹	-
New Ashford,	21	161	107	18	239	46	3	27	21	27	27	27	26	1
New Bedford,	60	449	408	55	-	28	-	60	53	55	52	57	58	1
New Braintree,	73	1,521	1,181	73	2	79	-	73	73	67	69	71	72	1

¹ Incomplete report.

REPORT OF INSPECTION OF ANIMALS, STABLES, ETC. — *Continued.*

CITY OR TOWN.	Number Herds in- spected.	Number Neat Cattle inspected.	Number Cows in- spected.	Number Herds kept Clean and in Good Condition.	Number Sheep in- spected.	Number Swine in- spected.	Number Goats in- spected.	Number Stables in- spected.	Number Stables well located.	Number Stables well lighted.	Number Stables well ventilated.	Number Stables kept Clean.	Number Stables with Good Water Sup- ply.	Number Stables im- proved since Last Report.
Newbury,	117	1,425	1,035	102 ¹	82	275	1	173	157 ¹	128	166	172	146	1
Newburyport,	89	487	374	83 ¹	30	227	-	103	99	98	101	93	93 ¹	6
New Marlborough,	142	1,427	976	139 ¹	305	176	-	168	124 ¹	126	146 ¹	140	165 ¹	5
New Salem,	109	463	314	99	59	79	-	109	104	109	109	102	109	1
Newton,	216	1,200	1,112	166 ¹	20	246	5	238	177 ¹	189 ¹	185 ¹	187 ¹	222 ¹	4
Norfolk,	73	446	340	67 ¹	-	246	-	72	71 ¹	69	69	69	59	5
North Adams,	31	489	402	31	-	122	-	31	27 ¹	31	31	31	31	-
Northampton,	62	792	531	58 ¹	-	237	-	66	48	50	66	65	66	8
North Andover,	65	953	718	59	8	71	-	65	61	63	63	63	65	3
North Attleborough,	89	612	498	76 ¹	4	120	-	90	82	84	81 ¹	89	76	25
Northborough,	125	1,046	832	114	33	49	-	130	127	103	76	110	73	13
Northbridge,	85	574	403	81 ¹	4	188	-	95	89	84	86	74	95	3
North Brookfield,	144	1,240	920	94 ¹	-	131	-	161	151 ¹	31	38 ¹	123 ¹	157 ¹	12
Northfield,	73	627	474	67 ¹	68	118	2	73	68	57	62	64	73	2
North Reading,	61	571	444	56	5	10	-	63	58	55	63	54	63	1
Norton,	160	505	397	143 ¹	28	203	1	159	144 ¹	146 ¹	131 ¹	147 ¹	155 ¹	4

Norwell,	.	.	.	.	.	.	.	98	228	184	95	22	274	-	98	93	68	97	97	98	-
Norwood,	.	.	.	.	.	.	.	98	454	381	84 ¹	-	138	-	102	88	65 ¹	89 ¹	89 ¹	101 ¹	-
Oak Bluffs,	.	.	.	.	.	.	.	39	152	121	38 ¹	9	99	-	39	39	36 ¹	38	39	35	3
Oakham,	.	.	.	.	.	.	.	51	610	455	44	-	58	-	51	49	30	25 ¹	46	34 ¹	9
Orange,	.	.	.	.	.	.	.	170	1,051	734	164	49	315	-	184	168	156	163	171	184	2
Orleans,	.	.	.	.	.	.	.	75	136	118	65 ¹	-	58	-	70	57 ¹	54	47	39	57	-
Otis, .	.	.	.	.	.	.	.	91	441	262	87 ¹	137	115	-	99	74 ¹	99	99	99	99	1
Oxford,	.	.	.	.	.	.	.	149	909	616	135 ¹	56	413	5	156	145	113	127	129 ¹	155	2
Palmer,	.	.	.	.	.	.	.	178	907	701	168	-	66	-	189	158	102	115	165	167	2
Paxton,	.	.	.	.	.	.	.	58	520	393	55	4	47	-	57	55	38	49	54	55	-
Peabody,	.	.	.	.	.	.	.	40	672	641	39	77	372	-	39	7	38	39	35	39	1
Pelham,	.	.	.	.	.	.	.	45	167	134	43	-	56	-	44	39	33	37	43	44	2
Pembroke,	.	.	.	.	.	.	.	101	218	140	99	1	77	-	101	96	99	100	96	94	-
Pepperell,	.	.	.	.	.	.	.	135	846	723	122	-	196	-	150	146 ¹	139	140	145	150	31
Peru, .	.	.	.	.	.	.	.	47	385	233	46 ¹	103	55	3	47 ¹	37 ¹	47 ¹	47 ¹	47 ¹	43 ¹	8
Petersham,	.	.	.	.	.	.	.	111	749	471	92 ¹	179	189	2	109	104	48	46	82	102	2
Phillipston,	.	.	.	.	.	.	.	66	351	301	61 ¹	-	126	-	71	64 ¹	40 ¹	69 ¹	63 ¹	69 ¹	9
Pittsfield,	.	.	.	.	.	.	.	59	884	681	55 ¹	29	67	1	56 ¹	53	36	31	49	56	1
Plainfield,	.	.	.	.	.	.	.	64	600	354	54 ¹	246	150	-	79	68 ¹	48	64 ¹	72 ¹	70 ¹	1
Plainville,	.	.	.	.	.	.	.	60	288	211	55	-	69	-	61	59	50	53	51	61	3
Plymouth,	.	.	.	.	.	.	.	171	472	377	144 ¹	25	380	4	163	127	86	111 ¹	128	162	14
Plympton,	.	.	.	.	.	.	.	55	221	151	50 ¹	1	56	6	58	54	47	28	49	34	-

¹ Incomplete report.

REPORT OF INSPECTION OF ANIMALS, STABLES, ETC. — *Continued.*

City or Town.	Number Herds in- spected.	Number Neat Cattle inspected.	Number Cows in- spected.	Number Herds kept Clean and in Good Condition.	Number Sheep in- spected.	Number Swine in- spected.	Number Goats in- spected.	Number Stables in- spected.	Number Stables well located.	Number Stables well lighted.	Number Stables well ventilated.	Number Stables kept Clean.	Number Stables with Good Water Sup- ply.	Number Stables im- proved since Last Report.
Prescott,	67	484	321	34	-	106	-	67	64	43	66	60	67	5
Princeton,	107	1,216	833	88 ¹	72	161	2	113	105	86	70	92	113	5
Provincetown,	12	87	71	11	-	14	-	13	12	9	6	9	9	4
Quincy,	70	649	619	58 ¹	5	56	-	84	74	74	81	74	80	1
Randolph,	97	364	337	96 ¹	-	418	1	98	92	98	98	98	98	6
Raynham,	119	603	472	117	13	207	-	120	115	87	107	115	119	6
Reading,	82	432	353	76	1	465	-	84	81	67	73	77	84	2
Rehoboth,	205	1,433	1,200	150 ¹	36	468	-	206	194	117	118	135	205	3
Revere,	28	180	174	28	-	620	-	30	28	26	18	28	11	1
Richmond,	83	568	396	83	488	204	-	83	66	76	83	83	83	3
Rochester,	111	324	229	100 ¹	13	257	3	114	114	67	99 ¹	91	114	9
Rockland,	101	254	219	58 ¹	-	55	-	103	97	64	48	56	102 ¹	1
Rockport,	48	227	206	39	-	34	-	43	42	33	32	33	35	5
Rowe,	62	398	226	56	153	79	-	64	59	59	56	58	50	-
Rowley,	78	618	448	39 ¹	18	62	5	79	38	50 ¹	50 ¹	47	63	4
Royalston,	113	702	448	87 ¹	83	211	1	112	108	83	108 ¹	94	111	2

Russell,	.	.	.	.	.	.	.	.	.	41	91	89	-	49	34	27	34	43	44	2
Rutland,	.	.	.	.	.	93 ¹	1	240	4	127 ¹	125	94 ¹	124 ¹	109 ¹	126	21				
Salem,	.	.	.	.	.	10	4	153	-	10	10	5	5	9 ¹	10	2				
Salisbury,	.	.	.	.	.	90	-	81	-	90	90	89	89	90	89	-				
Sandisfield,	.	.	.	.	.	91 ¹	31	167	-	110	82	71	110	103	102	1				
Sandwich,	.	.	.	.	.	81 ¹	-	87	1	83	75	82	82	83	83	-				
Saugus,	.	.	.	.	.	33 ¹	-	229	7	52	50	46	48	50	52	1				
Savoy,	.	.	.	.	.	74	60	170	-	96	81 ¹	33 ¹	45 ¹	87	87	1				
Scituate,	.	.	.	.	.	126 ¹	4	120	2	130	114 ¹	119	129	122	130	3				
Seekonk,	.	.	.	.	.	127 ¹	22	2,825	61	148	134 ¹	94	136	131	83 ¹	10				
Sharon,	.	.	.	.	.	71	1	156	-	75	64	61	75	73	54 ¹	5				
Sheffield,	.	.	.	.	.	164 ¹	229	544	1	227	154 ¹	124 ¹	181 ¹	198	180	33				
Shelburne,	.	.	.	.	.	91 ¹	877	131	-	106	90 ¹	99	104	104	105 ¹	3				
Sherborn,	.	.	.	.	.	101	-	346	22	116	105	69 ¹	56 ¹	106 ¹	110 ¹	3				
Shirley,	.	.	.	.	.	62	6	71	3	66	63	64	65	66	66	-				
Shrewsbury,	.	.	.	.	.	120 ¹	-	476	1	104	106	98	102	100	104	-				
Shutesbury,	.	.	.	.	.	44 ¹	2	76	1	54	49	44	54	53	49	3				
Somerset,	.	.	.	.	.	74 ¹	1	183	-	84	73 ¹	82 ¹	83 ¹	82 ¹	81 ¹	2				
Somerville,	.	.	.	.	.	24	-	193	2	29	28	15	15	24	29	2				
Southampton,	.	.	.	.	.	140	43	344	-	148	123	141	140	146	145	6				
Southborough,	77 ¹	-	52	-	104	104	99	96 ¹	97	103 ¹	1				
Southbridge,	71	-	195	-	81	79	73	76	72	80	2				

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REPORT OF INSPECTION OF ANIMALS, STABLES, ETC. — *Continued.*

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South Hadley,	102	1,110	955	68	1	339	4	122	108	85	40	102	107	3
Southwick,	111	901	652	106 ¹	366	263	26	114	103	89	105	111	111	1
Spencer,	128	1,377	967	121 ¹	15	327	7	133	123	130	132	124	133	2
Springfield,	123	506	407	82 ¹	20	1,294	7	85	57 ¹	45 ¹	68	72 ¹	72 ¹	1
Sterling,	144	1,726	1,286	126 ¹	106	167	1	146 ¹	137	98 ¹	56 ¹	122 ¹	127 ¹	7
Stockbridge,	93	853	620	73	424	215	5	109	75	48 ¹	58	92	96	17
Stoneham,	74	393	342	42	2	945	—	83	31 ¹	32	22	60	60	3
Stoughton,	137	465	387	98 ¹	—	102	9	141	127	96	123	116	138	1
Stow,	95	908	636	14 ¹	—	185	18	110	102 ¹	40	27	23 ¹	90 ¹	4
Sturbridge,	56	692	416	44 ¹	7	77	—	58	55	37	52	45	56	1
Sudbury,	72	1,134	931	62	—	289	2	78	23	68	68	76	75	1
Sunderland,	60	740	610	12	58	399	—	62	62	16	28	23	52	14
Sutton,	179	1,459	1,016	97 ¹	59	254	3	193	185 ¹	57 ¹	18	97 ¹	191 ¹	22
Swampscott,	21	60	58	20	—	12	—	21	13	19	18	18	21	2
Swansea,	124	937	817	120 ¹	3	162	—	124	123	124	124	123	124	1
Taunton,	149	896	751	146 ¹	10	548	—	149	140	149	149	149	148	—

Templeton, .	132	750	442	125 ¹	5	237	—	135	129 ¹	91 ¹	113 ¹	126 ¹	134 ¹	11
Tewksbury, .	110	739	639	98	—	450	—	117	114	93	105 ¹	91	105	1
Tisbury, .	18	68	55	17 ¹	—	40	—	18	17	16 ¹	15 ¹	17 ¹	17 ¹	5
Tolland, .	34	409	255	34	—	98	—	46	35 ¹	44	46	46	46	—
Topsfield, .	72	567	473	62 ¹	4	155	3	73	68 ¹	56	59	58	63 ¹	2
Townsend, .	126	425	335	115	2	132	—	130	129	108	119	119	121	5
Truro, .	55	204	164	54	—	60	—	55	41	55	55	55	55	1
Tyngsborough, .	66	396	322	61 ¹	83	361	—	63	60	54	58	63	61	4
Tyringham, .	50	551	369	42	200	118	—	74	74	60	74	70	74	5
Upton, .	80	505	350	74	—	125	—	85	74	74	79	75	85	—
Uxbridge, .	121	826	590	117 ¹	55	326	50	131	125	124	126 ¹	128	124	4
Wakefield, .	68	345	310	68	2	329	1	76	69	72	74	67	72	—
Wales, .	46	244	148	45	131	95	—	50	44	37	46	48	30	3
Walpole, .	95	513	423	95	26	520	1	95	66	70	73	72	81	5
Waltham, .	28	513	469	15 ¹	—	680	—	23	19 ¹	15 ¹	15 ¹	17 ¹	6	2
Ware, .	108	977	687	107	—	153	8	108	105	102	108	106	108	4
Wareham, .	86	255	209	74 ¹	3	126	1	86	82	70	82	77	86	—
Warren, .	132	1,727	1,153	116	39	240	1	146 ¹	134	75	25 ¹	127	125 ¹	12
Warwick, .	61	280	181	60	22	84	—	63	53	57	55	55	50	—
Washington, .	52	638	329	35 ¹	638	139	2	67	45	37	67	67	67	1
Watertown, .	45	329	321	43	—	291	3	51	47	27	38	48	51	—
Wayland, .	68	679	613	68	4	876	1	69	38	67	67	69	64 ¹	2

¹ Incomplete report.

REPORT OF INSPECTION OF ANIMALS, STABLES, ETC. — *Concluded.*

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Webster,	29	236	216	29	—	31	—	29	29	27	27	27	23 ¹	3	
Wellesley,	65	245	222	64	—	—	1	66	60	33	54	63	66	—	
Wellfleet,	37	94	76	16 ¹	—	49	—	37	31 ¹	35	33 ¹	36	37	4	
Wendell,	63	214	121	56 ¹	42	196	1	64	64	46	13	64	60	2	
Wenham,	31	207	191	30 ¹	—	3	—	31	30	31	31	31	27 ¹	—	
Westborough,	126	1,493	1,124	117	1	569	6	131	108	98	109	95	115	9	
West Boylston,	88	916	695	85 ¹	16	224	—	104	104	95	104	102	104	14	
West Bridgewater,	82	717	609	70 ¹	13	133	—	82	72	40 ¹	61 ¹	50 ¹	39	14	
West Brookfield,	97	1,393	819	83	22	277	10	111	108	20	44	80	95	10	
Westfield,	228	1,412	1,000	225	8	666	3	249	219	248	248	248	248	2	
Westford,	104	1,044	771	90	—	182	—	115	115	99	109 ¹	82	115	2	
Westhampton,	57	546	346	44	1	131	—	65	36	32	43	48	63	2	
Westminster,	109	677	551	95 ¹	27	1	—	102	96 ¹	53 ¹	6 ¹	92 ¹	1 ¹	5	
West Newbury,	116	1,021	785	110	58	289	5	127	65	118	125	100 ¹	124 ¹	112	
Weston,	113	1,006	912	106 ¹	55	421	—	119	110	109	112	105	119	15	
Westport,	301	1,530	1,241	281 ¹	11	414	1	311 ¹	292	165 ¹	248 ¹	269 ¹	286 ¹	95	

West Springfield,	129	879	715	127	6	513	-	129	123	128	125	127	129	10
West Stockbridge,	114	528	398	109 ¹	18	170	1	109	83	104 ¹	108	105	109	4
West Tisbury,	56	211	167	53 ¹	897	54	-	53	25 ¹	52	52	50	49	-
Westwood,	145	745	642	127 ¹	3	339	1	152	143	136	148	141	152	1
Weymouth,	139	652	590	137	4	223	-	189	161	123	115	110	166	3
Whately,	104	734	515	104	15	275	-	121	113 ¹	109	120 ¹	119 ¹	121	1
Whitman,	107	379	216	102 ¹	5	259	6	84	75	65 ¹	66	79 ¹	84	8
Wilbraham,	113	835	502	88 ¹	-	248	-	132	110	102	119	94	117	4
Williamsburg,	103	688	436	89 ¹	45	127	-	106	94 ¹	55 ¹	77 ¹	97	90 ¹	-
Williamstown,	184	1,470	1,136	160	1,494	556	2	184	161	106	83	158	184	8
Wilmington,	72	257	196	67	2	51	12	72	67	52	63	67	71	-
Winchendon,	126	743	550	125	16	246	5	123	110 ¹	100	114	116	119 ¹	23
Winchester,	36	244	235	35	2	106	6	38	27	32 ¹	33	34	22 ¹	1
Windsor,	87	791	493	87	98	193	-	108	84	105	108	108	97	1
Winthrop,	11	34	33	10	-	-	-	12	12	12	12	12	12	1
Woburn,	77	307	265	61	-	113	2	77	53	52	51	48	77	-
Worcester,	302	1,978	1,670	297 ¹	62	3,845	2	303	290 ¹	300	301	300	303	12
Worthington,	94	827	466	92 ¹	118	181	-	97	76 ¹	85	97	96 ¹	96 ¹	1
Wrentham,	66	262	201	33	-	67	5	66	64 ¹	20	3	41	49	7
Yarmouth,	52	142	120	51	25	49	-	52	42	50	52	52	51	-
	33,011	234,347	177,047	28,395	26,384	82,801	1,185	34,666	29,999	26,630	28,484	30,280	32,035	1,732

¹ Incomplete report.

It will be seen by the foregoing table that the inspectors of animals examined 234,347 head of neat cattle, of which 177,047 were cows, as compared with 237,647 neat cattle the previous year, of which 155,876 were milch cows. The reason for the increase in the number of cows is that the year before the milch cows were given in one column; that is, those that were actually giving milk at the time of the inspection. As a good many cows that were milch cows when inspected will have become dry by the time the report is printed, and a good many of the cows that were dry will have calved, it seemed better to give in the table the total number of cows in the State, rather than the cows actually giving milk at the time of inspection.

The report shows an actual decrease in the number of neat cattle, compared with the previous year, of 3,300 head. The report of the inspectors of animals for the year ending Nov. 30, 1907, showed a decrease of nearly 10,000 head of neat cattle from the previous year, so that in two years there has been a decrease of over 13,000 head of neat cattle in Massachusetts, as shown by the reports of the inspectors.

Judging by the reports of the inspection by the inspectors of animals, there also seems to have been a slight falling off in the number of sheep and swine in the State, and a slight increase in the number of goats.

During the year 1908 the Legislature passed an act (chapter 378, Acts of 1908) providing that in all cities at least one of the inspectors of animals appointed under the provisions of section 12 of chapter 90 of the Revised Laws shall be a registered veterinary surgeon. This act was approved April 10, 1908. It means that hereafter a veterinary surgeon will have to be appointed as inspector of animals in a city. The reason this act was not made to include towns is because of the impossibility of securing veterinary surgeons to act as inspectors of animals in the small towns. While it may be desirable to have veterinarians in cities to fill these positions, it must be remembered that an inspector who is prompt and businesslike in his manner of doing his work, who attends immediately to orders directed to him by the Chief of the Cattle Bureau and makes his reports to the

office promptly, renders much more valuable assistance to the Bureau than even a veterinarian may do who is lax and unbusinesslike in his methods.

The Legislature also amended sections 11 and 27 of chapter 90 of the Revised Laws, relative to reports of contagious diseases being made to the Chief of the Cattle Bureau, so as to render the law effective, and has thus remedied the defects to which attention has been called in previous reports.

TUBERCULOSIS.

At the International Congress on Tuberculosis, held at Washington during the past autumn, all kinds of views were presented by various scientists upon the danger to mankind from consuming the products of tuberculous cattle, Koch on the one hand saying that in taking measures for preventing the spread of tuberculosis in the human race the cow could be looked upon as a negligible factor, while on the other hand men like Dr. G. Simms Woodhead of the Royal British Commission, and Professor Arloing of Lyons, France, consider the use of the uncooked milk and other dairy products from tuberculous cows as very dangerous. The safest views to adopt are those of conservative men, such as Dr. Theobald Smith of Massachusetts, who believes there is a certain amount of danger from the use of raw milk from tuberculous cows, but that the danger has been in many instances exaggerated.

Dr. Smith was the first to discover a difference in the tubercle bacilli found in sputum and the type found in cattle. Koch speaks of them as the *typus humanus* and *typus bovinus* of the tubercle bacillus. Dr. Smith and his former assistant, Dr. P. A. Lewis, have investigated a number of cases of various kinds of tuberculosis, and in the cervical glands of children have found the *typus bovinus* in a number of instances. They have also been found in mesenteric glands, and may also occasionally be found associated with cases of tuberculous meningitis in children.

In about 50 per cent of the cases of tuberculosis of the cervical lymph glands studied by Dr. Smith and Dr. Lewis they found the bovine type of the tubercle bacillus present,

as shown by microscopic study and artificial cultivation. Other observers find from 25 per cent to 50 per cent of these forms of tuberculosis in children to show the bovine type of bacillus.

Last summer, in order to assist in this study, the Cattle Bureau bought six calves for experimental purposes and furnished their food and care. Dr. Smith and Dr. Lewis inoculated the calves with cultures of tubercle bacilli from the cervical lymph glands of three children suffering from this form of tuberculosis. Cultures from each case were inoculated intravenously into three calves and subcutaneously into three. All the calves developed acute and fatal tuberculosis, showing that the disease in the children was of bovine origin. The increasing numbers of cases of tuberculosis in swine seem to be of bovine origin. A case of tuberculosis in a horse, seen at Ayer by Dr. H. P. Rogers last summer, was due to infection from cattle, as Dr. Smith obtained a culture from the lesions in the horse's lung, where the bacillus was clearly of the bovine type.

The work of the inspectors of animals in quarantining tuberculous cattle and cows with nodulated udders, which are examined by agents of the Cattle Bureau and appraised and killed if found to be diseased, gives the State a fair system of dairy inspection as far as protecting the public health is concerned, but it is not decreasing the prevalence of the disease among our herds to any great extent, if at all. Tuberculosis is a disease that the farmer can no more afford to allow to prevail among his cattle and swine than he can afford to allow contagious pleuro-pneumonia or foot-and-mouth disease to run riot among his animals, and it is time the farmers of the State became more interested in its eradication than they are at present, from an economic point of view, even if the question of protecting the public health does not appeal to them. As the Cattle Bureau spends its entire annual appropriation, and more, too, every year, it does not seem possible to do any more than at present without having more money with which to work, yet if more could be done it would be desirable, and in the end might save money for the future.

There seem to be various ways in which more could be done if means permitted. If all cattle, except beeves for immediate slaughter and calves under six months old offered for sale at Brighton market each week, Massachusetts as well as out of the State cattle, could be tested with tuberculin, and the sale of all reactors stopped so as to furnish a clean market, thus preventing infected animals from going out into the herds of the Commonwealth, it would be an advance on our present methods. At present only dairy, working and store cattle from out of the State are tested, because the State would have to pay for Massachusetts cattle that reacted, and the funds of the Cattle Bureau are insufficient for this.

There are buyers from Hampshire and Franklin counties who buy Massachusetts cows that are farrow or a long way from calving and ship them up to Belchertown, Greenfield, Shelburne, Bernardston and such towns, where they are kept by different farmers until they come in again, and are then shipped to Brighton as fresh cows. Many of these animals are tuberculous, and are spreading disease wherever they go. Such creatures could not be shipped to Maine, New Hampshire or Vermont without having to undergo a tuberculin test. The movement of such animals should be stopped, intrastate as well as interstate. Then herds where tuberculosis is constantly being found should be tested, the premises disinfected by the State, the herd retested in three or four months, and if any reacted the premises should be disinfected again. The owner should be given to understand that he must purchase only tested animals in the future, and that the State would never again compensate him for a tuberculous creature. There are certain herds from which one or two cows are now taken by the State every year, and paid for by the Commonwealth, where it seems like putting a premium on disease to do so, as the owners would take more pains to keep their herds healthy if this market for diseased cattle were taken away.

At present, when an entire herd is tested by the State the test is made with the understanding that the owner will take what the butcher will give for reacting animals that pass slaughterhouse inspection as fit for beef, the State to pay for

those that have to be rendered. This puts part of the burden of expense on the owner, and deters many from asking for a herd test because they cannot afford it under the conditions named. If the law could be changed so that the State could allow the owner to take what the butcher paid for hides and carcasses, and the difference between this and the appraised value of the animals could be paid from the Cattle Bureau appropriation, it would permit of more work of this kind being done, and make the Cattle Bureau appropriation go farther. Under the present law, if the State agreed to have the owner reimbursed the full appraised value of his cattle, the total amount paid out would have to come out of the Cattle Bureau appropriation, and all money received has to go into the State treasury; this does not help the Cattle Bureau appropriation, and the public gives the Chief of the Cattle Bureau very little credit for what he turns in.

Even under the onerous conditions imposed there was more interest during the past year among owners in having their herds cleaned up than has been shown for several years. Thirty-five herds were tested, comprising 703 head of cattle, of which 556 passed the test and 145 were killed; of these, 41 were rendered; the rest passed for beef to the credit of the owner. Two pure-bred Holsteins are held for further observation. In 1907 16 herds were tested, comprising 454 animals, of which 300 were released and 152 killed, 26 of which were rendered. These figures show a gain in the interest taken, and also in the proportion of healthy cattle to diseased ones. One herd of 25 head in Shelburne was cleaned up several years ago, and when tested last summer there was not a single reaction. This farmer is a woman. Another herd at Gardner, owned by the State, contained 86 head of cattle, only 1 of which reacted.

Another method which may in time be perfected is one for immunizing healthy cattle against tuberculosis. If the 22,000 cattle brought into Massachusetts each year from other States, which are not released until they pass a tuberculin test, could only be immunized in some way at the same time that they are tested, before going out into the herds of the

Commonwealth, it would go a long way toward helping to solve the tuberculosis problem.

Another important matter to which Professor Bang of Copenhagen calls attention is the danger to calves and pigs fed on raw skim milk or buttermilk from co-operative creameries. All such milk should be pasteurized before allowing farmers to take it away. In Denmark this pasteurization is required by law, and the law also requires that the sediment and scrapings from separators be destroyed, and not fed to pigs at all, as was formerly customary. Bang recommends that similar legislation be enacted everywhere. In Denmark the law also requires that cream to be used for making butter for export shall be pasteurized.

The following figures show the number of cattle quarantined by the local inspectors, the number condemned, number released, etc.: —

Massachusetts Cattle.

Number released,	1,027	
Number condemned, killed and paid for,	1,187	
Number permit to kill, and paid for,	85	
Number permit to kill, no award,	375	
Number died in quarantine, no award,	68	
Number condemned and killed, in process of settlement,	577	
Number in quarantine, unsettled,	2	
Total Massachusetts cattle,	—	3,321

Cattle from without the State.

Number released,	21	
Number condemned and killed, no award,	374	
Number unsettled,	5	
Number condemned, killed, no lesions found, all of which have been paid for,	8	
Total number interstate cattle,	—	408

Total number of cattle quarantined or reported for examination during the year, 3,729

Of the above 408 interstate cattle, 239 were tested and retested at Brighton, 7 of which were released, 232 con-

demned, and no lesions were found in 2, for which the State has reimbursed the owners. Of the remaining 169 cattle (which were tested at other points than Brighton), 6 were found to show no lesions and paid for.

In addition to the 3,729 head of cattle disposed of as above, 496 cattle and 141 swine have been reported by butchers, renderers and boards of health as having been found tuberculous at time of slaughter. Of this number, 445 cattle and 117 swine were slaughtered at the Brighton Abattoir, and 278 cattle and 92 swine were but slightly affected and were passed by the inspector of the Boston board of health or the United States Bureau of Animal Industry inspectors as fit for food; the others were rendered.

The following table, compiled from the monthly reports sent by the Chief of the Cattle Bureau to the United States Department of Commerce and Labor, shows the animals received at Boston during the twelve months ending Nov. 30, 1908:—

Receipts of Live Stock at Boston for Twelve Months ending Nov. 30, 1908.

FOR MONTH ENDING —	Cattle.	Calves.	Sheep and Lambs.	Swine.	Horses.
Dec. 31,	21,592	11,348	55,382	124,786	1,270
Jan. 28,	15,569	7,594	26,901	157,654	950
Feb. 29,	17,458	7,834	26,307	143,848	2,275
Mar. 31,	16,880	13,892	22,526	128,331	3,050
Apr. 30,	15,232	13,028	16,847	82,826	3,450
May 26,	10,983	14,405	23,932	94,608	3,090
June 30,	15,344	15,842	33,673	145,914	2,456
July 28,	7,707	9,516	23,192	136,281	2,060
Aug. 25,	13,435	9,654	29,450	92,015	2,040
Sept. 29,	19,454	11,581	37,747	100,341	2,080
Oct. 27,	16,062	9,955	34,813	88,318	1,975
Nov. 28,	18,944	9,993	48,757	134,823	1,820
Totals,	188,660	134,642	379,527	1,429,745	26,516

*Receipts of Stock at the Watertown Stock Yards, from Dec. 1, 1907,
to Nov. 30, 1908.*

Vermont cattle,	6,594
New Hampshire cattle,	4,324
New York cattle,	1,207
Massachusetts cattle,	2,262
Western cattle,	5,545
Sheep and lambs,	4,870
Swine,	4,932
Calves,	40,122

*Receipts of Stock at the New England Dressed Meat and Wool Com-
pany's Yards at Somerville, from Dec. 1, 1907, to Nov. 30, 1908.*

Maine cattle,	58
New Hampshire cattle,	1,443
Vermont cattle,	6,043
Massachusetts cattle,	216
Western cattle,	62,885
Canada cattle,	11,335
Sheep and lambs,	353,123
Swine,	1,400,516
Calves,	44,648

Receipts of Stock at Brighton, from Dec. 1, 1907, to Nov. 30, 1908.

Maine cattle,	10,024
New Hampshire cattle,	1,978
Vermont cattle,	2,189
New York cattle,	3,135
Massachusetts cattle,	11,679
Western cattle,	50,893
Canada cattle,	6,894
Sheep and lambs,	22,535
Calves,	48,772
Swine,	34,297
Cattle tested,	14,651
Cattle condemned after test,	241
Cattle killed on permit to kill,	22
Cattle released after test,	14,388

Report of Cattle brought into State during the Year to Points Outside of the Quarantine Stations.

For dairy and breeding purposes, tested before shipment,	633
For dairy and breeding purposes, tested after arrival, . . .	5,906
For dairy and breeding purposes, awaiting test, . . .	1
<hr/>	
Total,	6,540

Neat cattle on which no test was required, exclusive of cattle and calves for immediate slaughter, . . .	1,135
<hr/>	
Total,	7,675

The cattle and calves on which no test was required, exclusive of animals for immediate slaughter, were as follows:—

Returned from out of State pastures,	731
Calves under six months old,	400
Injured in transit and killed, or died before tested, . . .	4
<hr/>	
Total,	1,135

The number of cattle and calves brought into the State for immediate slaughter cannot be given exactly, as there were a number of permits issued on which definite returns were not received. In round numbers there were 8,000 cattle and calves brought in on permits intended for immediate slaughter.

Nearly all of the total number of animals given above were brought into the State on permits issued by the Chief of the Cattle Bureau, only 249 head having been brought in without permits, which were reported to this Bureau by railroad agents, local inspectors or others. Of these, 6 were accompanied by satisfactory certificates of tuberculin test, 1 was a calf under six months old, 19 were slaughtered at once for beef, 11 were simply unloaded in transit through the State, 2 were pastured in the State temporarily, and the remainder, 210 head, were tested by agents of the Cattle Bureau. There were also 2 herds brought into the State for exhibition without permit, which were duly reported to this Bureau.

There were 926 permits issued during the year. Of these, 128 were reported as not used, and 13 were revoked early in November on account of the existence of foot-and-mouth disease in other States.

Twelve permits were issued allowing cattle to be brought into the State for exhibition at agricultural fairs, to remain for a brief time only, 1 of which was not used; 7 were issued for returning cattle from exhibition in other States, and 1 permit was given allowing a six-legged calf to be brought in for exhibition purposes. Seventeen permits were issued for pasturing herds in the State during the season, and 3 allowing single animals to be brought in for a brief period, all the animals to be returned later in the season to the States from which they came. Two permits were given for returning cattle daily from pastures just beyond the State line. Six permits were given allowing cattle to be unloaded in transit through the State, and 1 allowing a number of head to be driven into the State to be loaded for shipment to the west.

Owing to the unsatisfactory work done by out of State veterinarians, Cattle Bureau Order No. 11 was amended by Cattle Bureau Order No. 15, which is as follows:—

CATTLE BUREAU ORDER NO. 15.

COMMONWEALTH OF MASSACHUSETTS,
CATTLE BUREAU OF THE STATE BOARD OF AGRICULTURE,
STATE HOUSE, BOSTON, April 29, 1908.

*To Transportation Companies, the Brighton Stock Yards Company,
and All Persons whom it may concern.*

Cattle Bureau Order No. 11 is hereby amended so as to read as follows:—

By virtue of the power and authority vested by law in the Cattle Bureau of the State Board of Agriculture, under the provisions of chapter 90 of the Revised Laws and chapter 116 of the Acts of 1902, you are hereby notified that tuberculosis, which is a contagious disease and is so recognized under the laws of this Commonwealth, exists among cattle of the several States and Territories of the United States, the District of Columbia and Canada, and such localities are, in the opinion of the Chief of this Bureau, infected districts.

You are hereby further notified that in order to prevent the importation of diseased animals, and as a means of suppressing this disease within this Commonwealth, the Chief of the Cattle Bureau hereby issues the following order:—

1. No neat cattle brought from any State or Territory of the United States, the District of Columbia, Canada or any other country without the limits of this Commonwealth shall be brought within the limits of this Commonwealth, except for delivery directly to the Union Stock Yards in the town of Watertown, the premises of the Brighton Stock Yards Company in Brighton, within the city of Boston, or the premises of the New England Dressed Meat and Wool Company in the city of Somerville, except upon a permit signed by the Chief of the Cattle Bureau, and no neat cattle so brought for delivery at any of said points shall be unloaded, except as provided in paragraph 3, at any point other than the said premises of the Brighton Stock Yards Company in Brighton, the Union Stock Yards in Watertown, or the premises of the New England Dressed Meat and Wool Company in Somerville.

2. All neat cattle brought within the limits of this Commonwealth from any place designated in paragraph 1 hereof, except for delivery as provided in the preceding paragraph, must be accompanied by a permit issued by the Chief of the Cattle Bureau.

3. If, for any cause, any such neat cattle are received by any of your agents within the limits of this Commonwealth at any place other than the Union Stock Yards in Watertown, the premises of the Brighton Stock Yards Company in Brighton, or the premises of the New England Dressed Meat and Wool Company in Somerville, not accompanied by a permit, as provided in paragraph 2 hereof, you will immediately notify this office, giving the place where said animals were received for shipment, the name of the consignee and destination of said animals. You will not remove said animals or permit them to be removed from the car or vehicle in which they are contained without permission from the Chief of the Cattle Bureau, or one of his agents, except that if, by reason of the crowded condition of the car, or because of the long confinement of said animals within the same, or for accident or otherwise, it is deemed expedient by you or your agent to unload the same, such animal or animals may be removed by you from said car or vehicle without permission, but in such case you will notify this office, and you will not allow said animal or animals to go out of the possession of your agent or off from your premises where said animals are unloaded except upon obtaining such permission.

4. All neat cattle brought within the limits of the premises in Brighton, Watertown and Somerville, designated in paragraph 1 hereof, are hereby declared to be quarantined until released by an agent of the Bureau.

5. All cattle except those for immediate slaughter, or calves under six months old, intended to be kept in the State permanently, must be tested with tuberculin by an agent of the Cattle Bureau after

arrival at destination, the only exception being cattle brought in from foreign countries which have passed a test given by an agent of the United States Bureau of Animal Industry. Cattle brought to the quarantine stations at Watertown, Brighton and Somerville, upon which a test is required, will be held and tested by the agent of the Cattle Bureau in charge of these stations. Cattle upon which a test is required, coming to points outside the limits of the quarantine stations, will be tested by an agent of the Cattle Bureau, free of expense to citizens of Massachusetts and at cost for other persons. All such cattle are to be held in quarantine at the risk and expense of the owner until released by order of the Chief of the Cattle Bureau. Cattle returning from out of the State pastures will not be subjected to a tuberculin test if they have not been out of the State over six months from the first of May previous. Cattle being sent out of the State during the winter months can be returned without being subjected to a tuberculin test within three months of the date of leaving the State. Animals under control of the United States Bureau of Animal Industry, Department of Agriculture, intended for export, are not included in this order. Animals believed to be diseased will be killed.

6. Any person violating the provisions of this order will be punished as provided in section 29 of chapter 90 of the Revised Laws.

7. Inspectors of animals throughout the Commonwealth shall publish this order by posting a printed copy of the same in at least three public places within the limits of their respective cities or towns.

This order shall take effect upon its approval.

AUSTIN PETERS,
Chief of Cattle Bureau.

Approved in Council, May 6, 1908.

E. F. HAMLIN,
Executive Secretary.

Owing to the inconvenience and hardship caused certain individuals residing near the State line, who had cattle killed without appraisal or payment after bringing them into the State and having them react to tuberculin tests made by agents of the Cattle Bureau, Order No. 16 was issued to remedy this trouble. It reads as follows: —

CATTLE BUREAU ORDER NO. 16.

COMMONWEALTH OF MASSACHUSETTS,
CATTLE BUREAU OF THE STATE BOARD OF AGRICULTURE,
STATE HOUSE, BOSTON, NOV. 2, 1908.

To Persons bringing Cattle into Massachusetts, and All Others whom it may concern.

Section 5 of Cattle Bureau Order No. 15 is hereby amended so as to provide as follows:—

1. Any person obtaining a permit to ship or drive neat cattle into Massachusetts from other States, upon which a tuberculin test is required, who desires to have such animals tested before shipment, will be allowed to have this done if he obtains permission from the Chief of the Cattle Bureau of the State Board of Agriculture to employ an agent of the Cattle Bureau to make such tests at the expense of the owner or shipper, such agent to be designated by the Chief of the Cattle Bureau and supplied with tuberculin by him.

2. Certificates of tuberculin test made outside the Commonwealth by said agents thus supplied with tuberculin may be accepted by the Chief of the Cattle Bureau in lieu of certificates of tuberculin test made by agents of the Cattle Bureau upon cattle after arrival in the Commonwealth, if upon examination such certificates are found to be satisfactory.

3. This order does not apply to neat cattle shipped to the Stock Yards at Brighton, Watertown or Somerville.

4. This order shall be published by sending a copy to each inspector of animals in the Commonwealth, and by furnishing a copy to each shipper of cattle into the Commonwealth upon permits issued under the provisions of section 1, Cattle Bureau Order No. 15.

This order shall take effect upon its approval.

AUSTIN PETERS,
Chief of Cattle Bureau.

Approved in Council, Nov. 11, 1908.

E. F. HAMLIN,
Executive Secretary.

MISCELLANEOUS DISEASES.

In addition to rabies, glanders and bovine tuberculosis there have been a number of outbreaks of various other diseases, usually classified in these reports under the heading of "miscellaneous," such as hog cholera, blackleg or symptomatic anthrax, anthrax, actinomycosis and tuberculosis among swine.

Beside the diseases specified above, which are among the contagious diseases recognized by the statutes of the Commonwealth, as specified in section 28, chapter 90 of the Revised Laws, attention is called every year to other diseases of a communicable character that are not specified in the law as contagious, but which agents are sent to investigate and to advise owners upon, although no further action can be taken.

One of these is mange among horses. A number of cases have been reported during the year, but the law does not permit of quarantining animals affected, or compelling owners to treat cases. Occasionally an old neglected horse dies of it, but as a rule it is a disease that is amenable to treatment, and one that does not increase materially in this climate. If it should assume dimensions sufficient to make it a menace to the health and value of our equine population, no doubt horse owners would be aroused to asking for legislation, which would at once be granted if there was a popular demand for it.

Occasionally a farmer may have an outbreak of pneumonia of an infectious character in his herd, to which the attention of the Cattle Bureau is called. It is not unusual in the winter months for a farmer to buy a new cow at Brighton, or elsewhere, and after she is taken home she may develop pneumonia, or diarrhœa, and infect others in the herd, and these troubles may cause occasional fatalities. Agents of the Cattle Bureau are frequently sent to investigate cases of this kind, but as these troubles are not included in the contagious diseases specified in the law, no action is taken beyond giving the owner some good advice, and no further action is necessary or legislation needed for diseases of this kind.

There has been rather less trouble than usual from diseases classified under the generic term of "hog cholera," including hog cholera, swine plague or anything analogous to it. Outbreaks have occurred during the year in Greenfield, Colrain, Fall River, Grafton, Barnstable, Kingston and Salem, but as a rule the herds involved were not large and the losses have not been very heavy. An account of the method of im-

munizing swine from hog cholera is given in another part of this report.

Tuberculosis in swine is not at all uncommon; the cases are generally discovered at the time of slaughter, and those reported by boards of health or inspectors are enumerated on another page.

A few cattle have been quarantined with actinomycosis of the jaw, but have been released with the advice to the owner to fatten and dispose of the animals for beef before the jaw of an infected animal became so diseased as to cause it to emaciate. One case of actinomycosis of the udder was immediately condemned and killed. As the lesions were confined to the udder, the carcass was returned to the owner for beef.

Symptomatic anthrax or blackleg has been more prevalent than usual during the past season, and outbreaks have occurred in Washington, Princeton, Hubbardston, Westminster, Templeton, Royalston, Barre, Northfield, Montague, Easthampton, Southampton and Granville. Fully 30 head of young cattle have died in the infected pastures, and probably more, as some cases may not have been reported, and nearly 200 head have been given the protective inoculation with blacklegoids by agents of the Cattle Bureau.

An outbreak of true anthrax occurred in Medford in July. Five cows owned by one man and 2 owned by two other persons died. These cattle were all within a quarter of a mile of each other, and it is difficult to say which premises the infection started on, but it was very likely conveyed by flies from one man's premises to another. The man who lost 5 cows had 1 left, which was later killed. The premises were thoroughly disinfected and the place where the larger number of cattle were kept was vacated for a while. Later, 2 cows were placed upon them and they remained well until the end of November, when 1 died of anthrax; the second one has since been killed, and then the stable floor was taken up, the planks disinfected, the earth underneath covered with quicklime to a depth of two inches, the manure buried after covering it over with quicklime. The premises are now vacant, except that a horse and some hens still remain there.

It is hoped there will be no further trouble in this locality the coming spring and summer, but time alone can tell. This is the first outbreak of anthrax in Massachusetts for several years. Dr. Theobald Smith examined specimens from one of the cows that died early in August and the cow that died the latter part of November, and found the anthrax bacillus present in both cases.

FINANCIAL STATEMENT.

At the close of the last fiscal year, Nov. 30, 1907, there was on hand, as per twelfth semiannual report:—

Balance of appropriation for salaries and expenses for 1907,	\$412 92	
Balance of appropriation for general work of Bureau for 1907,	5,087 22	
Appropriated under chapter 264, Acts of 1908, for expenses in excess of appropriations in the year 1907:—		
For salaries and expenses,	367 14	
For general work of Bureau,	3,650 58	
	<hr/>	\$9,517 86
Appropriation for salaries and expenses of 1908, chapter 46, Acts of 1908,	\$7,000 00	
Appropriation for general work of Bureau for 1908, chapter 44, Acts of 1908,	70,000 00	
	<hr/>	77,000 00
		<hr/>
Total to be accounted for,	\$86,517 86	
Expended during the year:—		
For 300 head of cattle condemned and killed during the year 1907, paid for in 1908,	\$6,572 65	
For 1,351 head of cattle condemned and killed during the year,	29,116 75	
For killing and burial, quarantine claims and arbitration expenses,	60 00	
	<hr/>	\$35,749 40
For services of agents (exclusive of glanders work),	\$12,823 55	
For expenses of agents (exclusive of glanders work),	4,746 82	
	<hr/>	
<i>Amounts carried forward,</i>	\$17,570 37	\$35,749 40

<i>Amounts brought forward,</i>		\$17,570 37	\$35,749 40
For expenses of quarantine stations,		6,298 31	
For expenses of glanders work, including services and expenses of agents, laboratory work and killing and burial,		8,763 02	
For laboratory expenses (exclusive of glanders work),		1,978 80	
For implements, ear tags, thermometers, etc.,		1,104 46	
For salary of Chief of Bureau,		1,800 00	
For salary of clerk,		1,200 00	
For salaries of assistant clerks and stenographers,		1,780 24	
For office expenses, printing, postage, stationery, etc.,		2,580 51	
For expenses of Chief of Bureau,		260 36	
		<hr/>	43,336 07
Total expenditures,			\$79,085 47
Balance from all accounts, Nov. 30, 1908,			7,432 39
			<hr/>
Total, as above,			\$86,517 86

This balance is made up from the following items: —

Balance of appropriation on account salary and expenses, 1907,	\$239 20	
Balance of appropriation for excess expenses, 1907,	398 20	
Balance of appropriation for salary and expenses, 1908 account,	94 55	
Balance of appropriation for general work of Bureau available for unsettled accounts of 1908,	6,700 44	
	<hr/>	\$7,432 39

Claims for 580 head of cattle condemned and killed as tuberculous during the year remain unsettled, to be paid for on proof of claims, the appraised value of which amounts to \$11,935.66.

There has been received during the year, from the sale of hides and carcasses of condemned animals, sale of ear tags, testing cattle for non-resident owners, etc., \$4,854.81.

The average price paid for condemned cattle for the year was \$21.55 each.

Under the requirements of chapter 220, Acts of 1903, 32 branding stamps, for use in the inspection of meat, have been furnished to 27 cities and towns by the Bureau during the year.

It will be seen by the foregoing statement that a balance of \$7,432.39 from all accounts was left on hand Nov. 30, 1908. When all the claims against the Cattle Bureau come in for the fiscal year just ended, this sum will not be sufficient to settle them, and there will be a deficit in the appropriation.

The Legislature of 1908 passed a deficiency appropriation bill on account of the Cattle Bureau amounting to \$3,917.72, and it is feared that the deficit for the year ending Nov. 30, 1908, will be double this amount, and possibly a little more.

Estimates made to the Auditor under the requirements of chapter 211, Acts of 1905, for the fiscal year ending Nov. 30, 1909, are for \$92,500, divided into \$7,500 for the salaries of the Chief of the Cattle Bureau and his clerk, extra clerical assistance, printing, postage and general office and incidental expenses, and \$85,000 for the general outside work in exterminating contagious diseases among horses and other animals.

This estimate is somewhat larger than the amount of the regular appropriations made by the Legislature for the Cattle Bureau during the past few years, but a larger amount seems necessary. The work of the office has to be figured very closely to keep its expenses inside the \$7,000 usually allowed, and in the general field work there has been a deficiency of from \$3,600 to \$11,500 every year since the Cattle Bureau was established, hence it would seem as well to make a larger appropriation at the beginning of the year as to make a deficiency appropriation at the next legislative session.

Respectfully submitted,

AUSTIN PETERS,
Chief of Cattle Bureau.

